Sustainment in Support of Large Scale Combat Operations

Operations Group
The National Training Center

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Foreword

Over the past two decades of counterinsurgency operations, maneuver commanders have often executed operations that culminate with the return to a forward operating base. These bases have robust sustainment infrastructures, from dining facilities that serve four meals per day to laundry facilities with a 24-hour turn-around time. Sustainment commanders have been tasked with managing these robust and complex systems. This is not an easy task, but it is also not the task that we are now asking them to execute as we shift our focus to large scale combat operations (LSCO).

Today, we are asking our tactical warfighting headquarters to move into austere environments with only what they can carry. They are without the comforts of home or the support architecture they are accustomed to, and must rapidly build combat power to execute operations with the necessary tempo and lethality to defeat a motivated, near-peer enemy on their home turf.

Our ability to rapidly deploy, stage necessary supplies, develop internal and external resupply and support mechanisms, and maintain our equipment directly contributes to our ability to accomplish the wartime mission. Regardless of branch or military occupational specialty (MOS), even our best Soldiers become nothing more than bystanders without proper supply and well-maintained equipment. It does not matter if you are a scout operating further forward on the battlefield than anyone else in the brigade combat team (BCT) or an infantryman in the back of a Bradley. If you do not have what you need, or if your equipment is not operational, you cannot do your job. At the National Training Center, we see these challenges every month.

Often, we spend inordinate amounts of time debating the best tactics, techniques, and procedures for every branch, MOS, and warfighting function. We wrestle continuously with the best methods for combining arms to accomplish our missions. We work tirelessly to train formations to combat our nation's threats. However, as an Army, if we cannot sustain ourselves in the envisioned operational environment against a near-peer threat, none of that will matter. We cannot defeat tomorrow's enemy without the commander's and staff's ability to combine arms, synchronize operations, and levy lethal platoons, companies, and battalions against tactical objectives with overwhelming violence. We cannot do any of that without well-trained Soldiers, and well-trained Soldiers cannot do their jobs without outstanding tactical sustainment.

From the brigade support battalion (BSB) losing their situational awareness of the current operation to the BCT losing their situational understanding of the sustainment future operation… from forward support companies (FSCs) applying garrison procedures in a contested environment to battalion S-4s failing to report logistics statuses (LOGSTATs)… from operators failing to perform preventive maintenance checks and services (PMCS) to leaders omitting maintenance from the priorities of work… each small cut to our sustainment system results in a loss of available combat power for the fight. Moreover, each combat power loss places a heavier burden on the Soldiers moving forward into battle. What might have been a well-resourced plan can easily become a

"mission impossible" task, all because of a unit's inability to execute a consistent, well thought out concept of sustainment that resupplied the front line and maintained combat power at the required LSCO pace.

The chapters in this publication deep dive into these topics and more, and are based on observations of great successes and bitter shortfalls here at the National Training Center over the past several years. While many topics are conceptual in nature, great effort has been placed on providing 'a way' — a method, a technique, a template — for sustainers and maneuverists alike to find success as they plan, prepare, and train for LSCO.

Lead. Train. Win. Train the Force!

Sincerely,

Michael J. Simmering
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Operations Group
The National Training Center and Fort Irwin

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Introduction

COL William "Joe" Parker III

As the Army postures away from preparing for counterinsurgency operations and brigade-centric fights and refocuses on division and corps-level large scale combat operations (LSCO), leadership must again charge the sustainment community with ensuring that combat forces are ready, prepared, and enabled to decisively deploy, fight, and win against any adversary in any environment. There is no better place to experiment, develop, and refine how to sustain LSCO than at combat training centers.

At face value, it appears that the shift from counterinsurgency operations to LSCO will utilize a number of the same concepts and doctrine utilized during the Army of Excellence. In reality, the changes to force structure, the increased use of automation and technology, and the speed in which information is required on the modern battlefield means that the Army has to be more adaptable, make quicker decisions, and understand operations unlike ever before. This transition is not a simple "back to the future" scenario. Army sustainers must think critically, constantly synchronize with operations, and understand the supported scheme of maneuver just as well as (or even above and beyond) their maneuver teammates.

This publication is a compilation of observations, lessons learned, best practices, and concepts compiled by observer coach/trainers at the National Training Center. This book represents almost two years of data and analysis focused on both brigade support and combat sustainment support battalions, and even a divisional support area command post. This book attempts to provide a candid perspective on the challenges currently facing tactical sustainers. To be successful, there must be engaged leadership at echelon, deliberate planning, and the ability to rehearse in a tactical setting — either in garrison or at a collective training event.

Thanks to all who contributed to making this publication a success and those who continue to dedicate their time and effort to ensure Army formations have what they need to support and win!

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CHAPTER 2

Noncommissioned Officers in Sustainment

CSM Krista Keune, SFC Bruno Richardson, SFC Donald Morris, SFC James Jenkins, MSG Charles Taylor, MSG Christian Cuyno, SFC Simotu Jones, and SFC Chamreun Nann

Utilizing personnel correctly (i.e., having the right Soldier or leader in the right position) is essential in every situation, but becomes even more critical during large scale combat operations (LSCO). The distance between units in the battlespace and the pace of operations both play a vital role in talent management across formations. Organizations often face sustainment manning shortages and a lack of key personnel. As such, every noncommissioned officer (NCO) must understand their position's roles and responsibilities, whatever those may be. Organizations must maximize talent management across the formation to aid in current and future operational planning. Especially the crucial positions that, if left unfilled or filled by the wrong person, will cripple a unit during LSCO.

In many units, NCOs contribute little or nothing to the planning process. This means that, arguably, the most experienced people are not assisting the staff during the military decision-making process (MDMP). Also, NCOs are often not included in critical meetings. Leaders, specifically NCOs in this case, must get out of their "garrison-based" comfort zone and get more involved in the planning process. Involvement in future and current operations is critical to successful future operations and successful organizations.

BRIGADE SUPPORT BATTALION COMMAND SERGEANT MAJOR

The brigade support battalion (BSB) command sergeant major (CSM) is the senior enlisted member of the BSB and a member of the commander's staff. The CSM offers a senior NCO perspective to the commander, and speaks on behalf of the enlisted Soldiers in the battalion. The CSM offers technical and tactical advice to the commander on the planning, training, preparation, and execution of all BSB and sustainment missions. Additionally, the BSB CSM communicates with the supported units' CSMs to verify the quality of received support, and resolve BSB issues for Soldiers in direct support to other units. Although typically located with the command group, the BSB CSM has the flexibility to maneuver wherever the requirement is needed.

The LSCO tempo generates requirements that force leaders to operate with increased proficiency and responsibilities. One leader who has the capacity for this increased workload is the BSB CSM. Along with serving as the senior enlisted advisor to the commander, the CSM should work with the executive officer to lead the staff. The CSM can provide expertise and guidance during the planning process and help oversee current operations.

OPERATIONS SERGEANT

The S-3 shop is the staff section responsible for matters pertaining to planning and coordination during battles. The operations sergeant is the senior NCO in charge (NCOIC) of monitoring and supervising the performance of the enlisted staff, and assisting the operations officer. Brigade and battalion-level operations sergeants prepare, authenticate, and publish the tactical standard operating procedure (SOP) at their perspective's level, and recommend priorities regarding the allocation of resources. Operations sergeants monitor the Army's surveillance activities and coordinate all maneuver aspects, such as boundaries and locations of command posts. Operations sergeants prepare operational records and reports, and ensure the implementation of administrative policies and procedures.

During LSCO, the protection integration cell within the BSB main command post takes on additional importance. The operations sergeant may be the NCOIC of the protection cell, or provide oversight to the protection cell if it is assigned outside of the S-3, such as to the headquarters company.

SUPPORT OPERATIONS NONCOMMISSIONED OFFICER IN CHARGE

The support operations (SPO) officer is the most critical logistics planner within the BSB. Every logistics effort goes through SPO. The SPO NCOIC is an experienced NCO that helps oversee the diverse and critical SPO section. The SPO section monitors the brigade's on-hand supply status (including medical logistics supplies) for all battalions, including the BSB. They use this information to identify resupply requirements and request external support when requirements exceed the on-hand quantities at the brigade support area. They then synchronize transportation assets to distribute these requirements forward. The SPO section monitors the brigade's maintenance status and works with numerous personalities in the Army field services battalion to ensure the brigade is appropriately resourced with all Class IX repair parts.

The SPO section also coordinates and provides oversight to the brigade's supply support activity (SSA) warehouse. This warehouse is responsible for receiving, storing, and shipping supply items. When necessary, the SPO section makes recommendations on how to weigh maintenance efforts across the brigade. They track brigade ammunition consumption and ensure replenishment is requested, processed, and resourced. In short, the SPO section is the planning and coordination center of gravity for all things sustainment, making the SPO NCOIC among the most critical senior sustainment NCOs in the brigade, second only to the BSB CSM.

LSCO demands that the SPO NCOIC operate equally to the SPO officer in charge (OIC). The NCOIC must act in place of the SPO OIC when necessary. The NCOIC must be just as knowledgeable of future operations, current operations, planning factors, and concept of sustainment as the SPO OIC.

S-6 NONCOMMISSIONED OFFICER IN CHARGE

The S-6 NCOIC's role is to be proficient in mission command systems and training Soldiers. They run day to day operations and are the S-6 OIC's senior advisor, providing the S-6 OIC with insight on the best course of action for future planning and operations. The S-6 NCOIC reviews equipment on the unit modified table of organization and equipment (MTOE) and develops the primary, alternate, contingency, and emergency (PACE) plan with the S-6 OIC. The S-6 NCOIC can also operate as continuity and contingency if the OIC has to attend meetings or is otherwise pulled away from their primary responsibilities. The S-6 OIC and NCOIC create shared understanding between the company-level communication representatives and commanders intent. Additionally, they guide technical support when conducting battalion communications exercises.

The company communication representatives provide the S-6 OIC and NCOIC with each company's combat power roll up of lower technology information. The S-6 NCOIC also provides the OIC with information on which units need field service representative support. Like the SPO NCOIC, the S-6 NCOIC does not stop at just being the communications subject matter expert, but also assists in future planning and current battle tracking.

PROTECTION CELL NONCOMMISSIONED OFFICER IN CHARGE

The protection cell's overall mission is to plan, prepare, and execute the integration of protection considerations throughout the operations process. The protection cell NCOIC serves at the forefront of all protection operations, provides subject matter expertise, and stands ready to execute the area defense plan in the absence of the protection cell OIC. The protection cell has planning

responsibilities, such as protection working groups; conducting chemical, biological, radiological, and nuclear (CBRN) operations; risk management; and implementing security measures such as a quick reaction force. The protection cell NCOIC should plan survivability positions, mitigate or reduce vulnerabilities, synchronize with adjacent units for terrain management, and employ attached security forces. When the first enemy rounds impact the support area, the protection cell is in charge. In the absence of the OIC, the NCOIC must be ready to fight with the battalion.

FIRST SERGEANT

Company first sergeants (1SGs) are the cornerstone to mission accomplishment. They hold the important position of joining Soldiers with essential items and aid. Without securing and allocating the vital classes of supply, operations will grind to a halt. Failing to address casualty and medical evacuations slows progress, and leads to preventable friendly deaths on the battlefield. The 1SG's management of sustainment operations through the company trains and combat trains command post is a critical element of successful LSCO. 1SGs often literally fuel the fight.

BRIGADE SUPPORT MEDICAL COMPANY FIRST SERGEANT

The brigade support medical company (BSMC) 1SG is the senior medical NCO in the brigade combat team (BCT). In addition to making sure the Role 2 medical facility is operating smoothly, the BSMC 1SG supports the synchronization and execution of Army Health System (AHS) functions. They work hand-in-hand with the brigade surgeon and the SPO medical section to coordinate and integrate medical assets for echelons above brigade (EAB). When necessary, they develop and refine the BSMC layout within the support area and develop the BSMC's defensive plan in conjunction with the sergeant of the guard protection cell OIC and NCOIC. During mass casualty situations, the 1SG coordinates and oversees combat lifesaver aid and litter team support. The 1SG also manages the mass casualty manpower pool, and directs traffic in and out of the treatment tent.

BRIGADE SUPPORT BATTALION MEDICAL SUPPORT OPERATIONS NONCOMMISSIONED OFFICER

The BSB SPO medical (MED) NCO assists with planning the execution of AHS functions to support current operations. When they identify medical shortfalls, they coordinate for EAB medical assets to support the BCT medical mission. In coordination with the BSMC command team and evacuation platoon leadership, the SPO MED NCO develops and refines the BCT's medical evacuation and casualty evacuation concept of support, including identifying potential ambulance exchange points. The SPO MED NCO is the keeper of the medical situation reports, and uses those reports to develop and refine the brigade's medical common operational picture.

TREATMENT PLATOON SERGEANT

The treatment platoon sergeant ensures their Soldiers are trained and ready to execute their vital medical tasks. They provide Role 1 and 2 medical treatment under the direction of a physician, physician's assistant, dentist, physical therapist, behavioral health office, or nurse. They also supervise the operational readiness, accountability, and maintenance of the vital medical equipment within the BCT. Although they are a tactical leader, during LSCO they serve in a higher capacity. They are the subject matter expert and honest broker to the BSMC command team on the readiness and capacity of Role 2's medical capability.

EVACUATION PLATOON SERGEANT

The evacuation platoon sergeant ensures that Soldiers are trained, properly licensed, and ready to perform their vital evacuation tasks. They supervise the operational readiness, accountability, and maintenance of all evacuation platforms. Like the treatment platoon sergeant, they are a tactical leader. During LSCO, they serve as the subject matter expert and honest broker to the BSMC command team on the readiness and capacity of Role 2's medical evacuation capability. If required, they provide direct support with evacuation platforms to maneuver battalions' Role 1s. Evacuation platoon sergeants must be prepared to provide bottom up refinement on all matters dealing with ambulance exchange point disposition and exchange routes. Their expertise and daily duties directly contribute to future medical and evacuation plans.

MAINTENANCE CONTROL NONCOMMISSIONED OFFICER

The maintenance control NCO's (MCNCO) job is to ensure the Soldiers and chain of command in a unit have the knowledge and experience necessary to maintain their equipment. The MCNCO's span of responsibility in LSCO is to supervise the battalion's maintenance plan for ground support equipment. Using the Global Combat Support System (GCSS)-Army program, the MCNCO has complete visibility of the unit's entire maintenance program. GCSS-Army allows the MCNCO to oversee and validate all maintenance being conducted (this process is outlined in Army Regulation [AR] 750-1, *Army Materiel Maintenance Policy*, 28 October 2019), and the service and maintenance timeline. The MCNCO reviews work orders and ensures that parts are ordered in the correct status and arrive on time. MCNCOs also review the status of all equipment (i.e., vehicles, generators, radios, weapons, and night vision devices) and enforce safety and environmental protection program compliance. The MCNCO's most important job is to advise staff and commanders on equipment readiness. All of the above applies to garrison operations, just as it does in LSCO. LSCO will bring with it the need to conduct these duties in an austere and contested environment across 24-hour operations. The MCNCO is the one who will lead and teach line mechanics how to operate in the field with as much efficiency, productivity, and throughput as in a climate-controlled maintenance bay.

TRUCK MASTER

EAB transportation companies have an organic truck master. Within the BCT, the A-distribution company headquarters' platoon sergeant and the forward support company's distribution platoon sergeant often assume this role. The truck master is there to assist the company operations section and executive officer with coordinating, supervising, and controlling company operations. They organize and supervise drivers' training, reconnoiter routes, and coordinate maintenance matters with the motor sergeant and platoon sergeants. They assist the operations section and executive officer in preparing operational reports, and maintain personnel and vehicle availability. Truck masters organize and formulate plans that are critical to successful operations. During LSCO, truck masters will need to integrate with battalion planners to inform battalion-level operational planning, formally and informally receive warning orders for future operations, and help the battalion track current operations. They will play a critical role communicating between the distribution company and the SPO section. As such, their understanding of mission requirements must mitigate any confusion and assist in expediting the planning and execution of required missions at the battalion and below level.

92A AUTOMATED LOGISTICS NONCOMMISSIONED OFFICER

The 92A automated logistics NCO serves as the materiel control and accounting supervisor for the BSB's multi-class SSA, with the mission of providing multi-facet sustainment support. They provide world-wide logistical support to customer units during austere, combat, or peacetime conditions. This NCO is responsible for managing the Army Materiel Command (AMC) stocks

in the SSA of the authorized stockage list by utilizing the GCSS-Army. They advise command-level leadership on key logistics issues. They supervise, conduct inspections, and provide technical assistance to supply and service operations at battalion or higher levels. They also assist in the development and preparation of operations information, including plans, maps, sketches, overlays, and other data related to supply organization employment.

CONVOY COMMANDER AND ASSISTANT CONVOY COMMANDER

The convoy commander (CC), who leads the convoy, is first in command and responsible for mission planning, preparation, and execution of the convoy, which includes determining the task organization, convoy configuration, and personnel and vehicle responsibilities. Other responsibilities of the CC include, but are not limited to:

- Conducting planning and coordination,
- Issuing the convoy operation order,
- Reviewing intelligence reports, and
- Briefing convoy personnel on the capabilities and activities of relevant threat and nonthreat actors along the planned routes.

Overall responsibility for these tasks falls to the CC, but there are certain tasks that the CC will delegate to the assistant convoy commander (ACC). ACCs are empowered to supervise pre-combat checks and inspections, including equipment, safety, fire control, and accountability procedures. Utilizing an ACC will result in more efficient convoy operations. A good practice is to have the CC maintain communications with the higher authority and the customer, while the ACC maintains internal communications, controls movement, and conducts appropriate actions upon contact. In many training and real world situations, the ACC manages the helicopter landing zone site and briefs the sustainment paragraph in the convoy brief.

As previously stated, the tempo of LSCO will demand more of sustainment units than in recent history. No one will feel this more than distribution companies and platoons. Sustaining LSCO is, at its core, a distribution fight. Section sergeants, squad leaders, platoon sergeants, and platoon leaders will quickly become full time CCs and ACCs. The roles and responsibilities of CCs and ACCs are a matter of unit SOPs. However, the understanding, planning, rigorous rehearsal, and repeated proficient execution of those roles and responsibilities is the key to success.

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CHAPTER 3

Setting Conditions for Success: What Commanders Must Consider when Preparing for Sustainment During Large Scale Combat Operations

LTC James Hubbard

INTRODUCTION

Arguably, sustainment units have more training opportunities at home station than maneuver units. In addition to the exercises that train and practice their individual tasks, sustainment units are constantly supporting other units' training. Maneuver units cycle in and out of collective maneuver training opportunities, but sustainers constantly support. For a long time, conducting garrison sustainment operations has been viewed as conducting sustainment training in-and-of-itself.

Since support units spend all of this time training, it is difficult to understand why they sometimes struggle when executing their wartime tasks in a contested environment. It is because sustainment battalions generally operate on two sets of tactics, techniques, and procedures (TTP): one for garrison and one for tactical operations. Unfortunately, the two categories of TTP have little overlap. For the sake of efficiency, garrison operation TTP are generally optimized to take advantage of short lines of communications (LOCs) and hardstand infrastructure. Tactical operation TTP are often less efficient, but train to support in austere, contested environments. Convenience incentivizes garrison TTP, but the expected challenges of large scale combat operations (LSCO) demands tactical TTP.

For commanders to adequately prepare their units to sustain during LSCO, they must set the conditions for sustainment units to train in garrison as they will fight in a tactical environment. Therefore, commanders must apply tactical processes and TTP in garrison support operations.

OPERATIONALIZING GARRISON LOGISTICS

In the tactical LSCO environment, successful organizations require their supported units to:

- Produce logistics status (LOGSTAT) reports;
- Analyze requirements;
- Execute logistics synchronization (LOGSYNC) meetings that forecast mission requirements at least 96-hours in advance;
- Apply a deliberate planning process at the brigade, battalion, and company level; and
- Arrive at the best method of support for a given scheme of maneuver.

In garrison, these same organizations require a simple transportation movement request from the supported unit 24-hours in advance, which can be tasked without much additional analysis. Keeping it simple gets the job done, but this lack of additional effort robs units of the training opportunity. Even in garrison, units should execute a deliberate planning process to arrive at an acceptable, feasible, and achievable concept of sustainment, and then execute support utilizing tactical TTP.

If a forward support company (FSC) requires Class I rations, bulk water, and fuel in support of their maneuver battalion's field exercise, that FSC should not draw directly from their base's subsistence supply management office, bulk water point, and fuel farm. Instead, they should articulate their requirements via a LOGSTAT report submitted during routine operations. The support operations (SPO) section should then take the requirements and resource the support.

During the next brigade combat team (BCT) LOGSYNC meeting, the BCT S-4 and SPO officer should complete coordination so the brigade support battalion (BSB) S-3 can build the order. The BSB's distribution company should draw the commodities and deliver them to the FSC via a logistics package (LOGPAC) or a logistics release point (LRP), even if the LOGPAC or LRP is from one motor pool to another. The battalion should also try to levy a time constraint against the operation as they would in the field, to match the constraints presented by the supported scheme of maneuver.

Units cannot execute garrison sustainment along these lines unless installation and division commanders set conditions. For example, it must become an installation-wide business practice that FSCs cannot acquire accounts to draw commodities from various garrison agencies. Forcing functions like this will prevent units from bypassing critical LSCO training out of misplaced incentives.

THE FIELD TRAINS COMMAND POST

When transitioning from garrison to field operations, maneuver units struggle with developing concept and intent for employing their field trains command posts (FTCPs). The first question is where to locate the FTCP. Maneuver doctrine suggests that FTCPs should be located in the brigade support area (BSA).[1] Emplacing FTCPs within the BSA gains force protection efficiencies and aids synchronization with the BSB headquarters. Collocating the FTCP within the BSA also allows the FTCP to share communications equipment with the BSA, mitigating maneuver battalions' limited access to upper tactical Internet.

Next, commanders need to figure out who will serve as the FTCP officer in charge. This is not a posting that any commander should take lightly. Especially in LSCO, where long LOCs and electromagnetic warfare may deny routine communications. It is critical that the maneuver battalion commander maintain a trusted agent within the BSA to make sustainment decisions for the battalion. Sustainment doctrine vary in their recommendations, but all offer a combination of the FSC commander, the headquarters and headquarters company commander, and the battalion S-4, or one of their representatives, to take charge of the FTCP.[2] Ultimately, the decision should not be based on duty position but on personality. The following are questions that commanders should consider when selecting an appropriate FTCP officer in charge.

- Who has the right talent to understand commander's intent and the tactical situation?
- Who can articulate the sustainment requirements?
- Who can serve as a trusted agent to make sustainment decisions for the battalion?
- Who can represent the battalion at a BSB LOGSYNC?
- Who can ensure the battalion is sustained during BSB planning sessions?

Finally, commanders must determine the composition of their FTCPs. Commanders should not assume this composition is standard across a brigade, or even across an operation. FTCP compositions should be different for each battalion, and should be based on their mission, task,

and purpose. A field artillery battalion may echelon more distribution assets forward because of ammunition requirements, while a light infantry battalion might leave their assets at the FTCP until needed. Composition may also change between phases of an operation. Commanders who want to decrease their logistics tail during a defense may opt to leave additional fuel assets at the FTCP in the BSA. When they transition to an offense, they may call the fuel forward and push surplus Class IV construction materials to the rear.

Regardless of FTCP composition, commanders must set conditions during garrison operations to ensure their units are well trained for LSCO. They should organize their FSC as they would in a tactical environment, with an FTCP and combat trains command post (CTCP). For example, if the battalion engages in a field training exercise, the FTCP should collocate with the BSB, even if they are not establishing a BSA for the operation. Synchronization and coordination meetings between the maneuver battalion and BSB should be accomplished per unit standard operating procedures (SOPs). If an SOP directs the FSC commander to attend the BSB LOGSYNC meeting, the FSC commander should tactically travel from the supported unit's area to the BSB area, wherever that may be. Communication between the FSC and BSB should be in accordance with the brigade's logistics communications primary, alternate, contingency, and emergency (PACE) plan.

In the event that the challenges of LSCO demand units detach FTCPs from the BSA (e.g., to avoid a concentration of friendly units and their large electromagnetic signature), commanders must be able to answer the following questions to ensure the suitability of the plan:

- How will I secure my FTCP?
- What communications equipment is necessary for the FTCP to communicate with me?
- What communications equipment is necessary for the FTCP to communicate with the BSA?
- Is there enough communications equipment to properly outfit the FTCP as a stand-alone node?

SECURITY OPERATIONS

To simulate security and reporting requirements in garrison, the battalion should mandate that convoy protection platforms escort LOGPACs and LRPs across the unit footprint. They should establish security once they arrive at their link-up positions, in accordance with the BCT tactical SOP. Communications equipment should be installed, operational, and tested within all platforms, to further enhance training and readiness for battalion reporting. Battalions should assign convoy commanders and assistant convoy commanders so they can rehearse troop leading procedures and mission preparation sequences, which should culminate in a convoy brief. Operations should end with the convoy commander and assistant convoy commander reporting to the battalion S-3, S-2, and SPO officer to conduct mission closeout reporting. All parties should be updated on the tasks accomplished, the stockage levels of the supported units, and the status of the routes utilized during execution.

When making considerations for LOC security, commanders must consider the bypass criteria established during the maneuver fight. Even a bypassed squad-sized enemy element in the support area can create difficulties for support units when conducting replenishment operations. BCT commanders must consider the following questions:

- Who is responsible for support area and LOC security?
- Within a BCT, is this tasked to the brigade engineer battalion (BEB)? If so, how will BEB personnel and security shortfalls be mitigated when the BCT transitions into a deliberate defense, and BEB assets are spread thin conducting engagement area development?

- Will the BCT task its reserve element with LOC security when the BCT is not committing it to the forward line of troops?
- Will an entire maneuver element be rotated back to the BEB or BSB to provide rear security?

TIME, DISTANCE, AND CARRYING CAPACITY

Home station training areas are not large enough to accurately replicate the vast distances that units travel during LSCO. Similarly, the pace of LSCO operations is unlike any feasible training timeline. Commanders must apply critical thinking to understand the demands that LSCO will present to their units. To begin to understand LSCO-level requirements, units should quadruple a BCT's consumption factors from a brigade-level collective training event or combat training center rotation. When this math is applied to fuel consumption, ammunition expenditures, or even Class IV requirements for a wide area defense, the question is whether unit sustainers have the capability to move at the speed of operations.

The BCT commander may empower the BSB commander to help solve these problems. The implication of the above paragraph is that for BCTs to be certain they will have the right supplies at the right place at the right time, they must move the supplies organically. However, a BSB commander has a very limited amount of movement capacity resident in their base companies. The wealth of distribution capacity is found across the FSCs. Maximizing the BCT's ability to meet movement requirements and priorities requires the BSB commander to have the latitude to re-task organize all BCT distribution assets, including FSC distribution platoons.

MAINTENANCE

Distribution operations are complex and time consuming, but maintenance operations within LSCO can also generate significant friction. The daily garrison workload of any maintenance organization is not as extreme as the anticipated workload during LSCO, but can still provide training opportunities. Executing tactical maintenance operations with the BSB's maintenance company or the FSC's maintenance platoons can be challenging without participating in a battalion or brigade-level training event. Maintenance units can simulate working in an austere environment by displacing their garrison operations to their local training areas.

When garrison recovery opportunities arise, recovery sections should take advantage of them and treat them as a tactical mission. The recovery crew should go through all steps and procedures as if operating in a tactical environment. The convoy commander should conduct a convoy brief and a pre-combat inspection after the subordinate leaders conduct pre-combat checks. This inspection should include radio/Joint Battle Command-Platform (JBCP)/Joint Capabilities Release (JCR) checks with the battalion headquarters. This additional training will undoubtedly cost immediate efficiency, but will provide the recovery team with an opportunity to exercise and validate their mission preparation checklist and troop leading procedures. Most importantly, it will build confident and cohesive recovery teams.

The above maintenance TTP can prepare an organization for LSCO at the company-level, but BCT and battalion commanders must set conditions to truly operationalize a unit's command maintenance discipline program. The following are questions that commanders should ask themselves:

- Are motor stables or "maintenance Mondays" a deliberate operation at the brigade-level?
- Do maintainers pull out their maintenance support devices and utilize them, or do they sit in a closet with outdated software?

- Do mechanics utilize special tools on the same regular basis that they would in the field, or do they rely on the convenience of a motor pool's maintenance bay?
- Is the Tactical Enterprise Logistics Systems (TELS) gunnery a habitual event on the training calendar to exercise all devices and ensure serviceability?
- Is time allotted to maintain all unit equipment, or just time for rolling stock and combat platforms?
- How are communications systems checked and maintained?
- Are medics pulled from treatment facilities to maintain their specialty equipment?
- Do units practice maintaining in a distributed manner or maintaining under contact?

LSCO will keep maneuver units on the move constantly. Support units will need to move similarly to provide support forward and enable the maneuver's operational reach and endurance. The commander must ask themselves when they want their maintainers to maintain their fleet. The answer will dictate how often maintenance collection points and other support nodes should displace. Units must strike a balance where maintenance nodes move often enough to remain accessible to the supported unit but static enough to enable the maintainers to keep the fleet in the fight.

Distance presents the same challenges for maintainers as it does for distribution units. Units must prepare for distance when operationalizing their maintenance program. During garrison operations, maintenance meetings are typically conducted in person. In a tactical environment, in-person maintenance meetings remain a best practice, but LSCO can make conducting in-person meetings challenging. How can units keep distributed maintenance meetings effective? Without practice at home, distributed meetings of any kind will fail to achieve their objectives. Training distributed meetings during garrison operations ensures that communication systems are functional and effective, that personnel are proficient at sharing and receiving information, and that leaders can make decisions.

During LSCO, the speed of operations across vast distances will require commanders to make considerations and issue guidance in an effort to increase the velocity of maintenance operations. It has already been discussed that BCT organic distribution capacity is limited, and commanders must set priorities for what their units must move themselves and what they can afford to request support for through echelons above brigade (EAB) units. Class IX repair parts are certainly no exception. Commanders accept risk by requesting sustainment brigade support to move Class IX parts so their own organic assets can move the sustainment that is more directly linked to combat power, such as Class V munitions. However, this could slow down maintenance operations. Or, when LOC security difficulties enable the enemy to interdict a Class IX movement, maintenance operations could come to a standstill. Even above the tactical level, repair part shortfalls and delays within the larger sustainment enterprise, either in theater or on the home front, could have tactical repercussions. Commanders must ask the following questions in an effort to increase the velocity of maintenance operations at their level during LSCO:

- What are the standards for controlled exchange?
- What are the standards for cannibalization, and who makes the call when parts are not going to be available?
- What shop stock is maintained at the maintenance platoon level to reduce the requirement for trips to the BSA and supply support activity?

- When was the last shop stock review conducted?
- How is shop stock stored during garrison operations to replicate tactical operations? Is it on a shelf in the motor pool or ready to move in a shop van?

MEDICAL SUPPORT

The majority of the brigade support medical company's (BSMC) Role 2 medical treatment facility mission (supporting a BCT with medical treatment such as x-rays, laboratory support, physical therapy, and behavioral health), has permanently moved out of the brigade's home station footprint. Providers, ancillary personnel, and a portion of the unit's 68Ws are employed elsewhere, so leaders must figure out how to create and maximize opportunities to practice skills and ensure readiness.

Commanders at the brigade, division, and even installation level need to relieve their medical personnel from the garrison architecture for certain periods of time to accomplish the necessary tactical training and preparation for LSCO. Within a BCT, for example, the brigade commander must empower the BSB commander to work with the BSMC commander and garrison medical facilities to balance doctor and medic coverage and support tactical training exercises. Frequent rigorous training, and the time to conduct it, allow the BSMC and maneuver battalion medical platoons to succeed in tactical environments, including LSCO.

Even with the constraints of garrison operations, units can operationalize their day-to-day home station activities. Company or battalion-level training creates medical training opportunities that are generally underutilized. When companies conduct ranges or battalions conduct gunneries, they take their medics and front line ambulances to the field. When not engaged with a real-world emergency situation, these medics can train with the BSMC's evacuation platoon. For example, the BSMC and maneuver battalion medical platoon can practice ambulance exchange point operations after minimal coordination with the BSB's medical (MED) SPO officer and brigade MED operations.

Tactical evacuation demands a MED common operational picture (COP), but units often struggle to develop a MED COP when transitioning to tactical operations. Developing a MED COP requires the BSMC, BSB, and brigade MED operations leaders to seek training repetitions. A best practice is simply to establish, maintain, and refine a MED COP during daily garrison operations.

When supporting company and battalion training events, MED platoons should practice establishing Role 1 treatment facilities while the BSMC practices establishing the Role 2. Units should also time facility establishment and tear down. For example, how long does it take the Role 2 facility to reach initial operational capability (with trauma beds up, patient hold established, and x-ray and lab capabilities established), and how long does it take them to get ready for displacement (including stowing equipment as per approved load plans). Understanding time constraints is an important benchmark for future training, and a critical planning factor for future operations.

LSCO will present commanders with medical considerations that they cannot replicate during the most heavily-resourced tactical training. Mass casualty (MASCAL) events and their unit responses must be understood and rehearsed at echelon. Commanders must ask themselves the following questions:

- Does the unit understand its medical capabilities and what constitutes a MASCAL event?
- When a MASCAL event happens, what is the response plan?
- If the Role 1 is split, to where will casualties evacuate?

- Will certain patients stop at company casualty collection points?
- How will the unit incorporate combat lifesavers (CLSs) into the overall plan?
- Who has the decision authority to launch organic aerial medical evacuation (MEDEVAC) aircraft?
- Will the unit identify organic non-MEDEVAC aircraft to provide non-standard aerial casualty evacuation (CASEVAC)?
- Once all MEDEVAC and CASEVAC assets, both air and ground, are expended, what EAB medical support and MEDEVAC assets exist in the area for support?

Answering these questions will support the development of a sufficiently detailed plan and create a baseline to train.

The amount of casualties expected in LSCO demands that units coordinate CASEVAC and CASEVAC platforms with the overall MEDEVAC plan. Units should anticipate using MEDEVAC assets to evacuate the highest priority casualties to the next level of care. Units must identify battalion-level CASEVAC platforms for use when all MEDEVAC assets are expended. These platforms must have dedicated crews who understand the MED COP and where to go on the battlefield. These platforms should also have CLS personnel and Class VIII medical supplies to provide baseline medical aid while en route to the next level of care. Battalion command sergeant majors and company first sergeants must take ownership of this problem set.

MORTUARY AFFAIRS

The same environmental and threat factors that increase the challenges of casualty evacuation also increase the BCT's demand to conduct mortuary affairs (MA operations. MA considerations start at the search for human remains, and do not end until the remains are handed off to MA professionals. Significant BCT constraints include MA manning, which usually consists of a single MA noncommissioned officer (NCO to help plan operations, and the lack of human remains cold-storage capacity within a BCT.

Commanders must ask themselves what will happen if security considerations inhibit the rearward movement of human remains to EAB MA support. Would it be possible for the division or corps to augment the BCT and BSB with a Mobile Integrated Remains Collection System? The following are more questions that commanders should be considering:

- Are search and recovery (S&R) teams identified and trained?
- What experts are on the team (beyond one MA NCO) that can plan an S&R operation?
- How will the unit execute an S&R while also securing the S&R team?
- MEDEVAC and CASEVAC assets cannot move human remains. What assets have the units identified that can?
- What allocation will be directed for human remains pouches (HRPs)? One per squad? One per Soldier? One per HRP vehicle?
- What equipment must be resourced for the S&R teams to be successful?
- How do the limited MA personnel and S&R teams get integrated into the EAB MA support within the area of operations?

- Because commanders may be tasked to conduct S&R of other nations and services, what coalition partners are in the adjacent area? Do these cultures have special considerations?

CONCLUSION

Sustainment battalions, particularly BSBs supporting BCTs, become mired in day-to-day tasks that inhibit their ability to conduct tactical training. This is why commanders must emphasize and prioritize it. The commander's commitment to tactical training throughout the conduct of garrison operations will begin to set the conditions for sustainment success in LSCO.

Support units must operationalize day-to-day garrison activities to replicate tactical operations, and discontinue the use of garrison-centric mission planning, preparation, and execution. This is a paradigm shift which begins with brigade and division commanders. Without this paradigm shift, units will continue to struggle through a steep learning curve when deployed. In LSCO, this is a struggle that cannot be afforded. A failure in sustainment will become a failure in maneuver, and this is something that cannot be abided.

Endnotes

1. Available maneuver doctrine include: Army Techniques Publication (ATP) 3-09.23, *Field Artillery Cannon Battalion*, 24 September 2015; ATP 3-20.96, *Cavalry Squadron*, 12 May 2016; ATP 3-21.20, I*nfantry Battalion,* 28 December 2017; ATP 3-21.21, *SBCT Infantry Battalion*, 18 March 2016; and ATP 3-90.5, *Combined Arms Battalion,* 15 July 2021.

2. Available sustainment doctrine include: Field Manual 4-0, *Sustainment Operations*, 31 July 2019; ATP 4-90, *Brigade Support Battalion*, 18 June 2020; and ATP 6-0.5, *Command Post Organization and Operations*, 01 March 2017.

CHAPTER 4

Two Staffs are better than One: Methods for Brigade Support Battalion and Brigade Combat Team Collaborative Planning

LTC James Hubbard

INTRODUCTION

Doctrine does not provide detailed, step-by-step methods or best practices for collaborative planning, particularly at the brigade combat team (BCT) level, so it is not surprising that many organizations struggle to develop a process that works when they are trying to plan in a geographically dispersed tactical environment. This chapter breaks down some of the methods and best practices for collaborative planning (focusing specifically on sustainment units) which have been observed during field experience and observations at the National Training Center.

Army Doctrine Publication (ADP) 5-0, *The Operations Process*, 31 July 2019, defines collaborative planning as, "…two or more echelons planning together in real time, sharing information, perceptions, and ideas to develop their respective plans simultaneously."[1] It defines parallel planning as, "…two or more echelons planning for the same operations nearly simultaneously facilitated by the use of warning orders by the higher headquarters."[2]

Parallel and collaborative planning among maneuver battalions and their higher BCT can be straightforward and come naturally. As the brigade conducts mission analysis and course of action development to decide what combat power to levy against what enemy forces and objectives, good warning orders (parallel planning) provide the vast majority of what the maneuver battalions need to prepare for their piece of the operation. As the brigade staff develops these warning orders, good maneuver battalions interface with their higher headquarters (collaborative planning) to see what their likely tasks might be, and inform their mission analysis and begin their running estimates. On the other hand, the same logic and methods do not overlay as easily for the BCT's supporting battalions.

The supporting battalions of the BCT (the field artillery [FA] battalion, brigade engineer battalion [BEB], and brigade support battalion [BSB]) are in a unique position, where their units and efforts support the entirety of the brigade's operations. As a result, they need to not only have a deep understanding of the brigade's plan to initiate their battalion-level planning, but they need to play a role in the formulation of that overarching plan to ensure the approved course of action is acceptable, feasible, and achievable from the perspective of their warfighting functions. This chapter will focus on the BSB and the sustainment warfighting function.

DEFINING THE PROBLEM

In tactical scenarios, BSBs have some fairly significant issues to overcome. First and foremost, there is the shortage of sustainment planning staff within the BCT headquarters. If not overcome, this lack of planning manpower forces the BSB to become overly reliant on a concept of support that lacks detail and often boils down to simple, generic sustainment rules of engagement. For example, commonly observed sustainment rules of engagement within a concept of support include items like the following:

- The A-Company BSB distribution company should push to the cavalry squadron, because they are too spread out and far away.
- The BEB is close, so they should pull from the brigade support area (BSA).
- The BSB should push to the maneuver battalion in the main effort.
- The supporting maneuver battalion must pull.
- The BSB should stage combat configured loads of Class V for the FA battalion.
- The sustainment brigade should throughput Class IV to engineer supply points for the defense.

Beyond the shortage of sustainment planning staff within a BCT, sustainers often fall short of clearly defining roles and responsibilities for the staff planners they do have.

- What is the support operations (SPO) section and BCT S-4's relationship?
- What is the BCT S-3 logistics planner responsible for?
- Where do the medical officer's (MEDO's) responsibilities end and the BCT surgeon's begin?
- How does the SPO medical shop fit in?
- What touchpoints, injects, azimuth checks, and troubleshoots are built into the system for the BSB commander to provide iterative input?

In summary, the shortage of sustainment planning staff within the BCT headquarters, the lack of understanding regarding roles and responsibilities, and the need for the BSB to understand the brigade's plan earlier than other line battalions, all create the need for the BSB to collaboratively plan with the brigade.

COURSE OF ACTION 1

One course of action is for the BSB to not plan collaboratively with the BCT at all. This approach is well rehearsed in the Army. Under this construct, the BCT S-4, S-1, MEDO, and surgeon are left alone to draft the entire brigade sustainment plan. On the surface, this is not a bad approach, as the BCT S-4 alone is the second most senior logistician within the BCT. Under the S-4's charge, there are experts in supply and property book matters, rations and field feeding, and strategic mobility. Together, the BCT S-1 section and MEDO/surgeon cell have expertise in most classes of supply and nearly all field services. Unfortunately, there are also small staffs and conflicting priorities, particularly regarding prioritizing the brigade from outside headquarters and agencies.

At this point, someone proficient with the modified table of organization and equipment (MTOE) structure of the BCT could argue that the BCT S-3 logistics planner could help close the staff bandwidth gap and speak for sustainment. Unfortunately, this logistics captain billet is often the last position to be filled and the first position commanders will accept risk on if there are logistics officer shortages elsewhere within the brigade. For units that are fortunate enough to have a logistics planner, that officer will most likely have a hand in the planning and product development for the entire operation, not merely the sustainment portion.

This course of action could ultimately result in the brigade order feeding the BSB a sustainment plan that has few details, is infeasible when overlaid with the scheme of maneuver, and places the BSA in an undesirable location. If sustainment-planning depth within the BCT staff is the friction point, the BSB can simply send logistics manpower and expertise to close this gap.

COURSE OF ACTION 2

An alternate course of action is for the BSB to send portions of the SPO section to plan with the BCT. This will absolutely close any gaps in staff available to focus on sustainment. Now the brigade will have adequate sustainment staff manpower to develop an acceptable, feasible, and achievable plan to support the scheme of maneuver. However, there is a missed opportunity here if the focus is solely on providing addition logisticians, and no other sections or subject matter experts. The lack of these other BSB staff sections could hinder the plan in unforeseeable ways. For example, the BSB S-2 is best suited to provide reverse warfighting function analysis of the enemy's sustainment architecture, which the BCT should target. The most critical lost opportunity might be the lack of BSB commander involvement. The BSB commander is the senior logistician in the BCT. They should drive the planning process from the sustainment perspective, set priorities, answer procedural questions, and troubleshoot the planners' concepts whenever possible. The lack of BSB commander involvement may result in anything from a simple mismatch of sustainment priorities to an infeasible sustainment plan, despite the aggregate increase in sustainers formulating that plan. A potential solution to these problems is a course of action that goes even further.

COURSE OF ACTION 3

One final course of action to achieve the desired end state is for the entirety of the BSB staff to plan in perfect collaboration with the BCT staff. Under this concept, and similar to the second course of action, the brigade should have adequate sustainment staff to develop the best plan possible. Having the entire BSB collaboratively plan with the brigade opens the door for the BSB S-3 shop itself to author the brigade order's Paragraph 4 and Annex F with input from the BCT sustainment staff (BCT S-4, S-1, MEDO, and surgeon), the SPO officer, and the BSB commander. This alleviates significant work from the BCT S-3 shop, and allows them to put more effort into the rest of the plan and other products. Additionally, this method places the BSB commander firmly into the role of the sustainment coordinator (SUSTCOORD) for the BCT, able to direct and influence the staff (both the BSB and BCT) throughout the entire planning process on all sustainment things.

It makes sense for the BSB to have a hand in planning sustainment, if they are expected to execute it. It is infeasible for the brigade staff alone to develop an adequate sustainment plan. When they are left alone to do so, the BSB will likely be unsatisfied with the brigade's order. Therefore, it is recommended that if the BSB commander is not comfortable with levying their entire staff to plan in perfect collaboration with the BCT staff, then they at least provide a significant cross-section of the battalion staff. This cross-section, while SPO heavy, should also include subject matter experts from the S-1 and S-4 sections to further aid with sustainment planning. The S-2 should also be involved, to provide enemy sustainment reverse warfighting function analysis. Finally, expertise from the SPO medical shop and brigade support medical company (BSMC) can help formulate the casualty/medical evacuation plan and the best employment of the BSMC's Role 2 medical facility (a crucial piece of the overall BCT's plan).

FIELD ARTILLERY PROVIDES AN EXAMPLE

The FA battalion has perhaps the most notable and robust connection to the BCT via the brigade fire support office (FSO). More often than not, the FSO is located in the brigade headquarters in garrison and the main command post in the field, despite the fact that the FSO is actually on the FA battalion MTOE. This creates the opportunity for the FSO and BCT S-3 to remain synchronized and enable true collaborative planning. It is not uncommon for the FA battalion commander to place themselves with the FSO in the brigade main command post, which implies a certain comfort level with the executive officer, S-3, and command sergeant major running the FA battalion. In short,

this construct enables the FA battalion commander to serve as the fires coordinator (FSCOORD) for the BCT. In what ways could the BSB follow suit and allow the BSB commander to serve as the SUSTCOORD?

One could look at the SPO section and draw numerous comparisons between that office and the FSO. Both are assigned to support battalions, but are also one-of-one across the brigade. Both have the unique and low-density skillset to plan, synchronize, and enable supporting operations within their warfighting function. However, the FSO is commonly treated as the BCT FSO while the SPO section is the BSB SPO section, and rarely leaves the support area. Remedying this situation may pull the BSB into planning at the brigade-level from the start.

See Figure 4-1 for a BCT and BSB collaborative planning concept. This concept assumes geographic dispersion between the BSB and BCT, arguably the most troublesome issue to overcome. This geographic dispersion is the result of different headquarters buildings in garrison and expansive terrain in a large scale combat operations (LSCO) environment. Accounting for this dispersion would require the BSB commander to split the staff into "key staff," who relocate to the brigade to collaboratively plan, and "left behind staff," who develop battalion-level products. The key staff can be as robust as the commander deems necessary to facilitate brigade-level sustainment planning and product development. Distributing the BSB staff in this manner will require the BSB commander to create distributed and physical communication "touchpoint opportunities" to facilitate shared understanding between the BSB commander, BSB staff, and BCT staff. These touchpoint opportunities will also allow the BSB commander to provide sustainment feedback and guidance to planners at all levels.

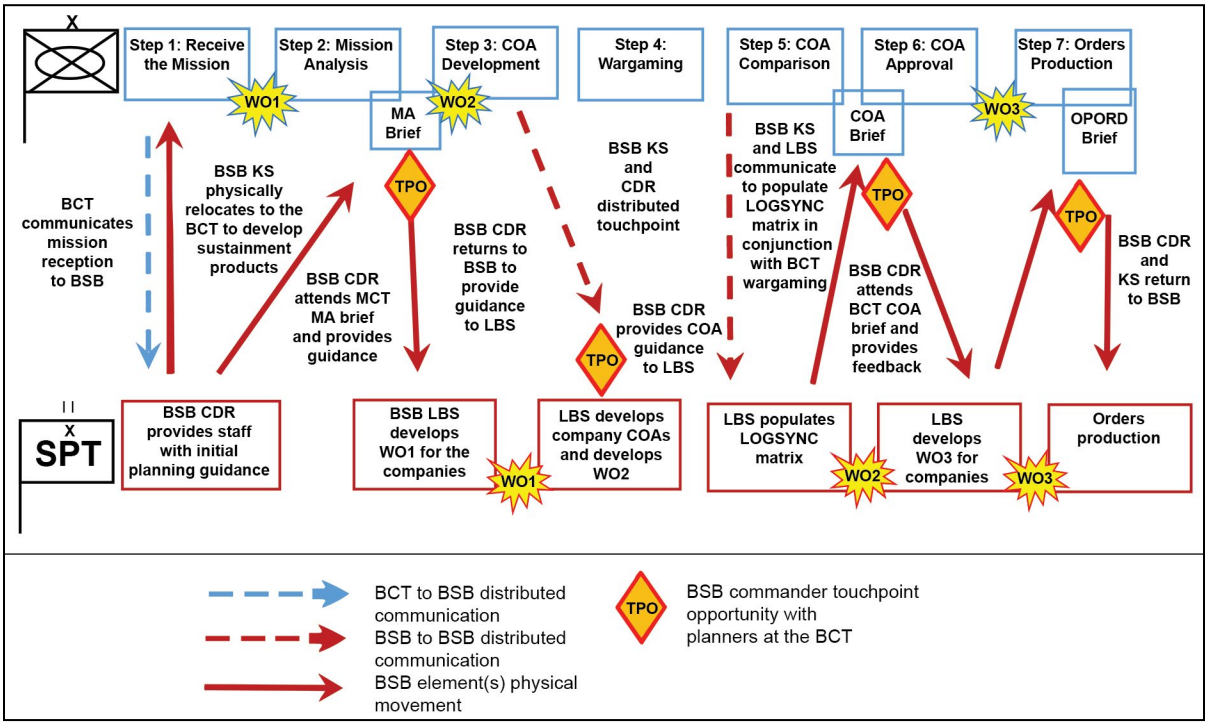

Figure 4-1. BCT and BSB Collaborative Planning Across Distance Concept

CONCLUSION

It may be necessary for a culture shift to occur among sustainment battalion commanders when it comes to collaborative planning with their higher headquarters, particularly BSBs and BCTs. While FA battalion commanders readily and eagerly assume the role of FSCOORD for their BCT, BSB commanders often stand by and wait for their brigade commanders to empower them to become the SUSTCOORD. Should a BSB commander's role as the SUSTCOORD be implied? And if this happened, would anyone object? Should the SPO section be empowered to assume the position of the BCT SPO section, and not merely the BSB's SPO section?

These are tough questions that individual units need to figure out for themselves based on what works best for their organization. What remains clear is that the BSB should not stand by for a BCT order to initiate its planning process. Doing so leads to a game of catch-up that is likely to end in failure, and failure in LSCO is not an option.

Endnotes

1. ADP 5-0, *The Operations Process*, 31 July 2019.

2. Ibid.

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CHAPTER 5

The Sustainment Battalion Main Command Post

LTC James Hubbard

INTRODUCTION

Combat sustainment support battalions (CSSBs) operating within a division support area and brigade support battalions (BSB) operating within a brigade support area both require command and control. A sustainment battalion main command post (CP) is no different from a maneuver battalion main CP. They are both the nexus of all staff functions, controlling and synchronizing current and future operations, and exercising the operations process. Unlike a maneuver battalion however, a sustainment battalion does not traditionally fight out of multiple CPs, such as the main CP or tactical CP. However, it does have the ability to split into a main CP and early entry CP.

THE MAIN COMMAND POST AND THE EARLY ENTRY COMMAND POST

According to Army Techniques Publication (ATP) 4-93.1, *Combat Sustainment Support Battalion,* 19 June 2017, a CSSB can support a main CP and an early entry CP. "The main CP is a facility containing the majority of the staff designed to control current operations, conduct detailed analysis, and plan future operations… An early entry CP is a lead element of a headquarters designed to control operations until the remaining portions of the headquarters are deployed and operational."[1] Similarly, ATP 4-90, *Brigade Support Battalion,* 18 June 2020, explains that a BSB commander, "…can establish an early entry CP to help them control operations during the deployment phase of operations." Displacement is the best way for a sustainment battalion's doctrinal capability to simultaneously form an early entry CP and a main CP. BSBs and CSSBs at the National Training Center often launch an early entry CP to their desired future location to conduct reconnaissance of the new site and establish a mission command node. Once established, the early entry CP can assume mission command of the battalion while the main CP at the rearward site breaks down, relocates, and establishes the new site.

WARFIGHTING FUNCTIONS AND INTEGRATING CELLS

Doctrine tells us that commanders organize their CPs into various cells, including functional cells and integrating cells. Sustainment battalions often struggle to find the personnel and equipment (based on modified tables of organization and equipment [MTOE]) to establish these cells in an effective manner. To be successful, sustainment commanders must prioritize what cells they create and combine multiple integrating cells into single entities to develop efficiency-gaining methods. Of specific interest to the sustainment commander is the current operations integration cell, doctrinally called, "…the focal point for the execution of operations."[2]

Field observations at the National Training Center consistently reveal that a doctrinal current operations integrating cell is the linchpin to successful execution and battle tracking of sustainment operations supporting the brigade's scheme of maneuver. Having a map, a convoy tracker, and a radio means that a sustainment battalion has a current operations section. However, this does not necessarily mean it is effective. All warfighting functions might not be present, or it might not facilitate the common operating picture.

Commanders struggle to establish a current operations section that includes a cross-section of the entire staff (and therefore all assigned warfighting functions) for multiple reasons. First, commanders often default to establishing a field CP in a manner similar to their garrison headquarters — with

compartmentalized sections and offices. Second, there is an issue with limited personnel and equipment. Finally, some believe that establishing a dispersed CP (i.e., a CP that covers multiple tents and/or mounted workspaces, such as the M1087 Expandable Van Shelter, or "expando-van") offers a degree of protection. In this construct, a common practice is using an S-1/S-4 space, an S-2/S-3 space, an S-6 space, and a support operations (SPO) space. Unfortunately, the result of this is a very compartmentalized staff — the classic "stovepipe" analogy. When asked, commanders often say that the SPO space is the future operations or plans cell, while the S-2/S-3 space is the current operations cell. Unfortunately, the S-2/S-3 space (or the current operations section) almost never includes all warfighting functions. This is a departure from doctrine, but more importantly it impedes the effectiveness of the current operations cell and the overall CP itself. The mistake of this "stovepipe" CP is that each staff section (or cluster of two or three staff sections) works hard and does the best they can, but ultimately fails because they are working independently of each other. A stove-piped CP can perform only the following three of the four CP functions, as defined by ATP 4-93.1:

- Plan and prepare for operations.
- Receive, analyze, and disseminate information.
- Prepare reports.

A stove-piped CP cannot adequately perform the fourth function, which is to, "control operations, integrate resources, and synchronize current operations."[3] For this reason, the CP current operations cell should contain all possible representatives.

Having an S-1 representative within the main CP current operations section means that CP is able to maintain situational understanding of the battalion and other units within the support area, as elements are continuously departing and returning. S-2 representatives can update the common operating picture of the supported units' ever-evolving scheme of maneuver and the enemy's constantly changing location and composition. S-4 representatives can inform the team on the current status of internal battalion resources so the S-3 can integrate those resources into the current operation. An S-6 representative is vital to keep the CP up on all forms of communication and rapidly troubleshoot problems as they arise. An SPO representative can inform the battalion commander of how a last-minute change will affect the operation 96-hours from now. And finally, the current operations cell with a protection cell representative can command and control the battalion's area defense fight in the event of enemy contact.

SURVIVABILITY OF THE MAIN COMMAND POST

With the threats that large scale combat operations (LSCO) will present, survivability of the sustainment nodes is a major concern. Often, these concerns motivate commanders to disperse command and control operations. This dispersion can aid in making a main CP more resilient to enemy attacks. For example, if indirect fires destroy the S-2/S-3 tent that the battalion was using as the current operations integrating cell, they can then relocate the cell to the S-4 tent, which was set up as a separate administration and logistics operating center. Although this is a sound concept, when a main CP is dispersed in this manner, its ability to accomplish what a main CP must achieve may be impeded, because this can lead to compartmentalization. Commanders may establish a compartmentalized CP in the name of survivability, but emplace the sections only meters apart, well within the destructive radius of even a 60mm mortar round, which defeats the purpose of dispersion and simultaneously retards the synergy of the staff. In the end, commanders must examine enemy threats and make mission variable-based decisions while accepting prudent risk to strike a balance between CP survivability, functionality, and effectiveness.

RECOMMENDATIONS

Sustainment commanders should pay particular attention when establishing a main CP, making sure the current operations integrating cell and all warfighting functions are present and synergized.

As discussed, it can be challenging for sustainment battalions to create all of the functional and integrating cells that doctrine recommends because of personnel and equipment issues. Commanders should combine the current operations integrating cell and the protection integrating cell. Both cells are important in a peer or near-pear fight during LSCO, and both require all staff sections, warfighting functions, and every available communications platform to be present. Each cell needs situational awareness to accomplish their mission. The best thing a commander can do to gain efficiencies between these two very requirement-heavy cells is combine them. The current operations cell, and all the personnel and equipment dedicated to it, should serve simultaneously as the protection cell. When the first round impacts the support area, the S-3 should stand up, not as the battalion operations officer, but as the protection cell officer in charge, and start commanding the fight. Under this construct, the S-3 will already have all the personnel, warfighting functions, communications equipment, and situational awareness to do so.

SUMMARY

Doctrine explains that BSBs and CSSBs are resourced to operate out of main CPs and early entry CPs. It also states that sustainment battalions are capable of establishing a current operations integrating cell within the main CP, which is a vital section of any CP that contains representation from all staff sections and warfighting functions. Sustainment commanders often struggle to establish an effective CP because they do not establish an effective current operations cell, with the appropriate representation present. For several reasons, sustainment battalion CPs in the field are often compartmentalized and stove-piped, which impedes the synergy of the staff, detracts from shared situational awareness and understanding, and cannot adequately perform all the necessary CP tasks and functions. Therefore, commanders must emphasize structure, organization, and composition of their CPs, specifically focusing on a true fusion of all staff and warfighting functions within the current operations integrating cell. Combining the current operations integrating cell with the protection cell will gain efficiencies and set up the support area for success in a fight against a near-peer enemy during LSCO. Sustainment commanders establishing a secure support area, commanded and controlled by a doctrinal CP, is a key building block for success in the fight to come.

Endnotes

1. ATP 4-93.1, *Combat Sustainment Support Battalion*, 19 June 2017.

2. Field Manual 6-0, *Commander and Staff Organization and Operations*, 05 May 2014.

3. ATP 4-93.1, Ibid.

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CHAPTER 6

Preparing for Success: A Holistic Approach to Logistics Package Operations

SFC Richard Norris, CPT Kyle Myers, and LTC James Hubbard

INTRODUCTION

Of the many sustainment concerns present in large scale combat operations (LSCO), distribution operations routinely pose the toughest challenge. Tactical convoy operations, specifically, logistics packages (LOGPACs), will be the life-blood to maneuver operations. A common struggle among sustainment units, from brigade support battalions (BSBs) supporting brigade combat teams (BCTs), to division sustainment support battalions (DSSBs) supporting divisional units, is synchronizing sustainment with operational demands. Even the most developed operational plans suffer when a single LOGPAC fails to meet its start point on time. Late starting points are typically the result of a failure to adequately plan for an operation, and reduce the amount of time the line unit has to prepare for the mission. Reduced preparation time can lead to issues such as a dead lined piece of equipment being identified shortly before starting, Soldiers loading the improper supplies, or pre-combat checks and pre-combat inspections pinpointing deficiencies (from communications issues to weapon problems) too late to fix before an on-time start point.

No unit is immune from these common issues. These are struggles shared by the composite supply companies and composite truck companies of the DSSBs, the A-distribution companies of the BSBs, and the distribution platoons of the forward support companies (FSCs) of maneuver battalions. The only solution is to dedicate as much time as possible for deliberate mission preparation at the squad/section level. This dedicated time comes from deliberate mission planning, which begins at the brigade level. This chapter will explore recommendations for the successful planning, preparation, execution, and recovery from LOGPAC missions with the BCT.

LOGISTICS PACKAGE PLANNING AT THE BRIGADE LEVEL

Units at the battalion level could execute two to three LOGPACs per day, with the potential for more. Executing the military decision-making process (MDMP) for each one will consume the staff and prevent them from doing anything else. Units should utilize the MDMP for the sustainment plan of an overarching maneuver operation, but they should also plan and execute LOGPACs to support that operation based on well-defined unit standards in the tactical and planning standard operating procedure (SOP). A critical component for LOGPAC operations is an operationalized planning process that leads to a deliberate preparation process. This sequence of events begins at the brigade level.

At the 72- to 60-hour planning horizon, battalion S-4s must identify requirements for their maneuver battalions and submit these requirements to the BCT S-4 and support operations (SPO) office via a logistics status (LOGSTAT) report. The BCT S-4 ensures these requirements are resourced for the BCT and uses them to inform planning for the next phase of the operation. The SPO section then synchronizes these requirements across all units, weighing them across capabilities and the priority of support. Every day, the SPO section should conduct a logistics synchronization (LOGSYNC) meeting to review and validate requirements 72- to 60-hours out from execution and begin refining requirements within the 24- and 48-hour horizons. At the 60-hour horizon, battalion-level planning becomes the center of gravity.

LOGISTICS PACKAGE PLANNING AT THE BATTALION LEVEL

At 60-hours out, battalion S-3s should begin developing a warning order based on what they learned at the SPO LOGSYNC meeting. In the case of a maneuver battalion, it is unlikely that the S-3 will develop the distribution plan for the FSC to execute. The FSC and battalion S-4 attend the SPO LOGSYNC meeting so they will understand what they are getting, when they are getting it, and how to distribute it forward to the supported companies. So they can then develop the plan and feed it to the S-3 to be operationalized. This is somewhat different for the BSB S-3, who should attend the SPO LOGSYNC meeting and manage the operations process leading to sustainment execution more closely. If the BSB S-3 is synchronizing with SPO and developing/publishing a warning order 60- to 48-hours out from execution, then A-Company can begin troop leading procedures (TLP) at least two days in advance of the LOGPAC.

At 48- to 36-hours out, the S-3 should have the warning order published and be developing the operations order. 35- to 24-hours out from the execution time is ideal for publishing the operations order. In this construct, A-Company will have had 24-hours to initiate TLP from the warning order while the battalion S-4s and SPO have had another day to refine requirements. The S-3 can capture any updates and changes for the operations order. At 24-hours out, the S-3 should transition away from planning (any last-minute changes to the requirements notwithstanding) and into the battle tracking of A-Company's mission preparation.

LOGISTICS PACKAGE PLANNING AT THE COMPANY LEVEL

A-Company should receive the battalion S-3's warning order no more than 48-hours out from LOGPAC execution, to allow them to begin company-level TLP. This also enables the company commander, first sergeant, and executive officer to develop and publish a company warning order to the platoon, squad, or section executing the LOGPAC in the 47- to 36-hour window. The platoon/squad/section-level leaders then have at least 36-hours to conduct their TLP. At no less than 24-hours in advance of the LOGPAC, leaders should notify the convoy commander and assistant convoy commander of the mission and begin battle tracking the deliberate preparation of the mission for a full day.

THE SUSTAINMENT BATTLE RHYTHM

The below planning cycles (Table 6-1 and Figure 6-1) require deliberate oversight by leadership at multiple echelons, but are necessary for successful operations. Adequate execution involves practice and a sustainment battle rhythm, starting at the brigade level and moving down to the company and platoon levels. The battle rhythm should support planning, on-time execution, and the battle tracking of the mission from warning order to post mission debrief.

Table 6-1. Planning Effort and Timeline by Echelon

Planning Horizon	Hour	Supported Battalion S-4	SPO	BSB S-3	A-Company	Platoon/ Squad/ Section
LOGPAC 17-69 Hours	72	Battalion S-4 identifies requirements 72-96 hours out	SPO section synchronizes requirements 72-96 hours out			
	71					
	70					
	69					
	68					
	67					
	66					
	65					
	64					
	63					
	62					
	61					
	60					
LOGPAC 59-48 Hours	59	Battalion S-4 continuously refines requirements based on company/ battery/troop LOGSTATs	SPO section continuously refines requirements based on battalion/ squadron LOGSTATs	S-3 publishes a warning order to A-Company	A-Company performs TLP	
	58					
	57					
	56					
	55					
	54					
	53					
	52					
	51					
	50					
	49					
	48					
LOGPAC 47-36 Hours	47			S-3 develops an operation order (OPORD)	A-Company publishes a warning order to platoon/ squadron/ section	
	46					
	45					
	44					
	43					
	42					
	41					
	40					
	39					
	38					
	37					
	36					

Planning Horizon	Hour	Supported Battalion S-4	SPO	BSB S-3	A-Company	Platoon/ Squad/ Section
LOGPAC 35-24 Hours	35	Battalion S-4 continuously refines	SPO office continuously refines	S-3 publishes an OPORD to A-Company	A-Company publishes an OPORD to platoon/ squadron/ section	Platoon/ squadron/ section performs TLP
	34					
	33					
	32					
	31					
	30					
	29					
	28					
	27					
	26					
	25					
	24					
LOGPAC 23-12 Hours	23	Battalion S-4 monitors inbound resupply operations		S-3 battle tracks deliberate LOGPAC preparation and execution	A-Company battle tracks deliberate LOGPAC preparation and execution	Platoon/ squadron/ section performs deliberate mission preparation
	22					
	21					
	20					
	19					
	18					
	17					
	16					
	15					
	14					
	13					
	12					
LOGPAC 11-1 Hours	11					
	10					
	9					
	8					
	7					
	6					
	5					
	4					
	3					
	2					
	1					
Start Point	0					

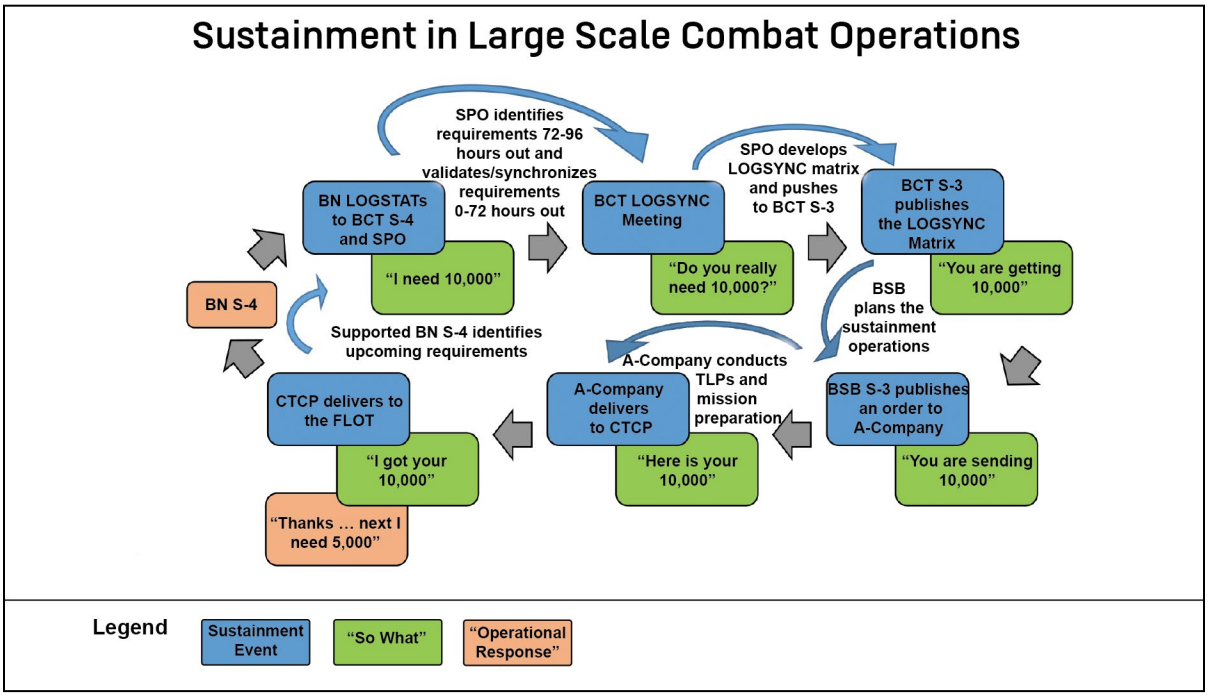

Figure 6-1. The Sustainment Cycle in LSCO

The LOGSTAT reports from the battalions to the BCT S-4 and SPO section are critical to identifying requirements accurately. LOGSTATs are typically reported twice daily, and serve as the main input of the BCT LOGSYNC meeting. In the LOGSYNC meeting, reports are reviewed, validated, and confirmed. The SPO officer (the chair for the LOGSYNC) synchronizes supply and distribution requirements in the 96- to 72-hour window and refines requirements in the 72- to 24-hour windows. The main output of the LOGSYNC meeting should be the LOGSYNC matrix, which SPO should push to the BCT S-4 and S-3 for publication as a fighting product in the BCT orders process (Figure 6-2).

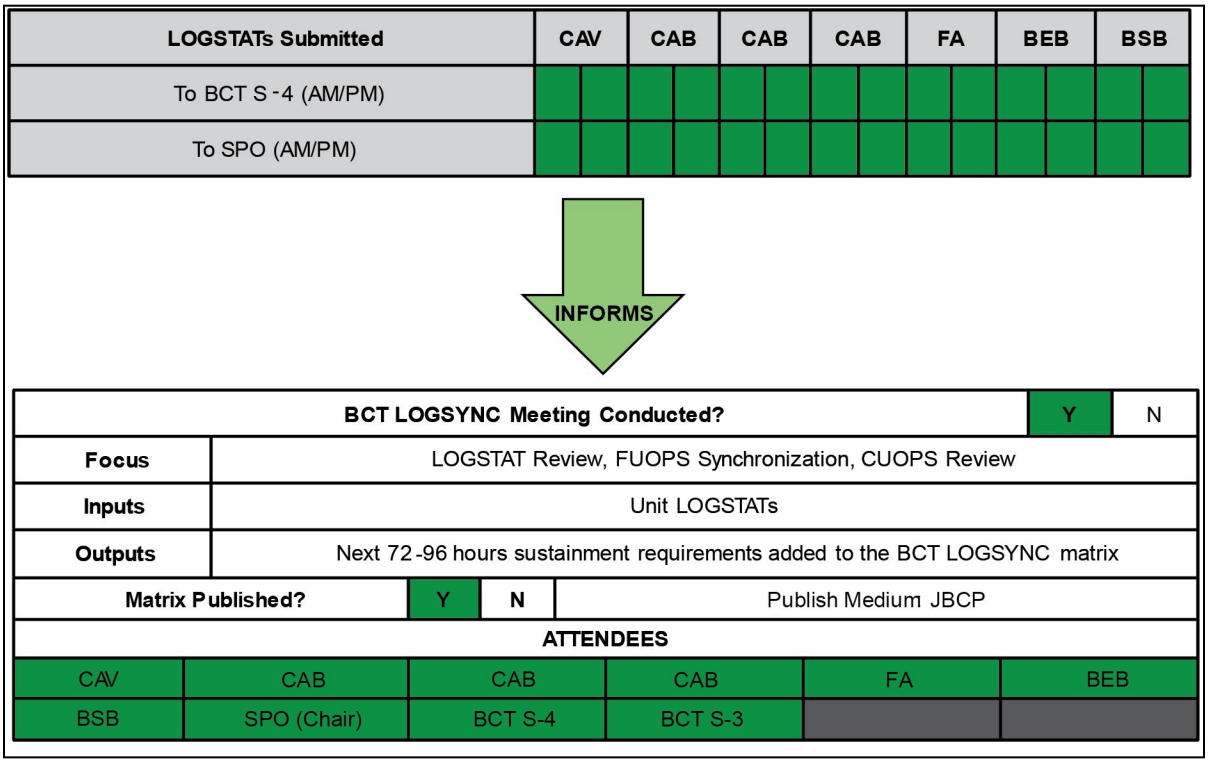

Figure 6-2. LOGSTATs Inform the BCT LOGSNYC Meeting

At the battalion level, the BSB S-3 should conduct a daily operations synchronization meeting that focuses on the warning orders they are developing (informed by the SPO office's LOGSYNC) in the 60- to 48-hour window and the operations orders they are developing in the 48- to 36-hour window. All companies should have a representative at this meeting to receive information on future operations and to provide input and planning considerations to the S-3 from their organization's perspective. The output of the S-3's operations synchronization meeting is formal orders (Figure 6-3).

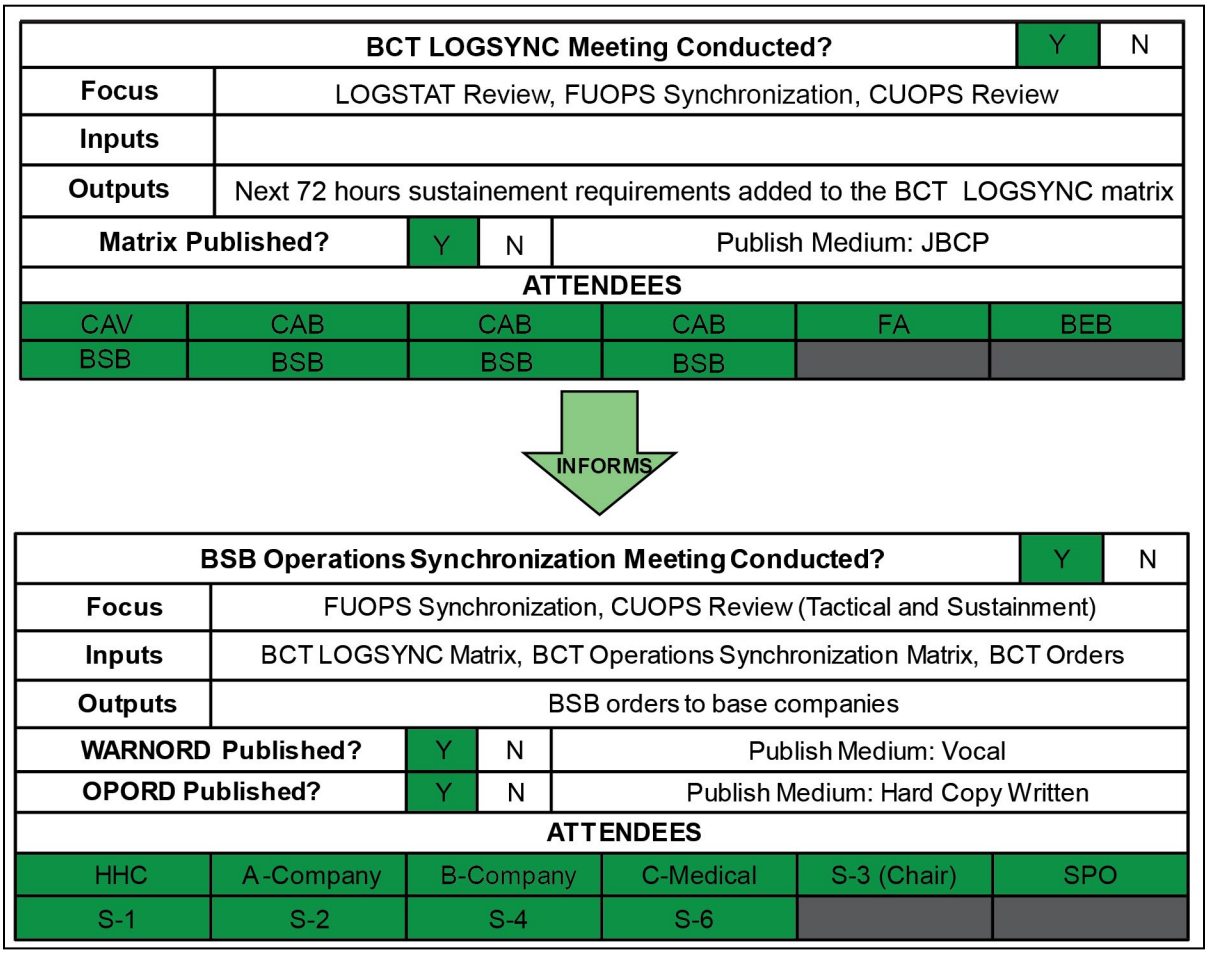

Figure 6-3. BCT LOGSYNC Meeting Informs BSB Operations Synchronization

With formal orders from the battalion S-3, A-Company can begin their TLP and company-level planning, develop company-level orders, and begin their deliberate LOGPAC preparation procedures (Figure 6-4).

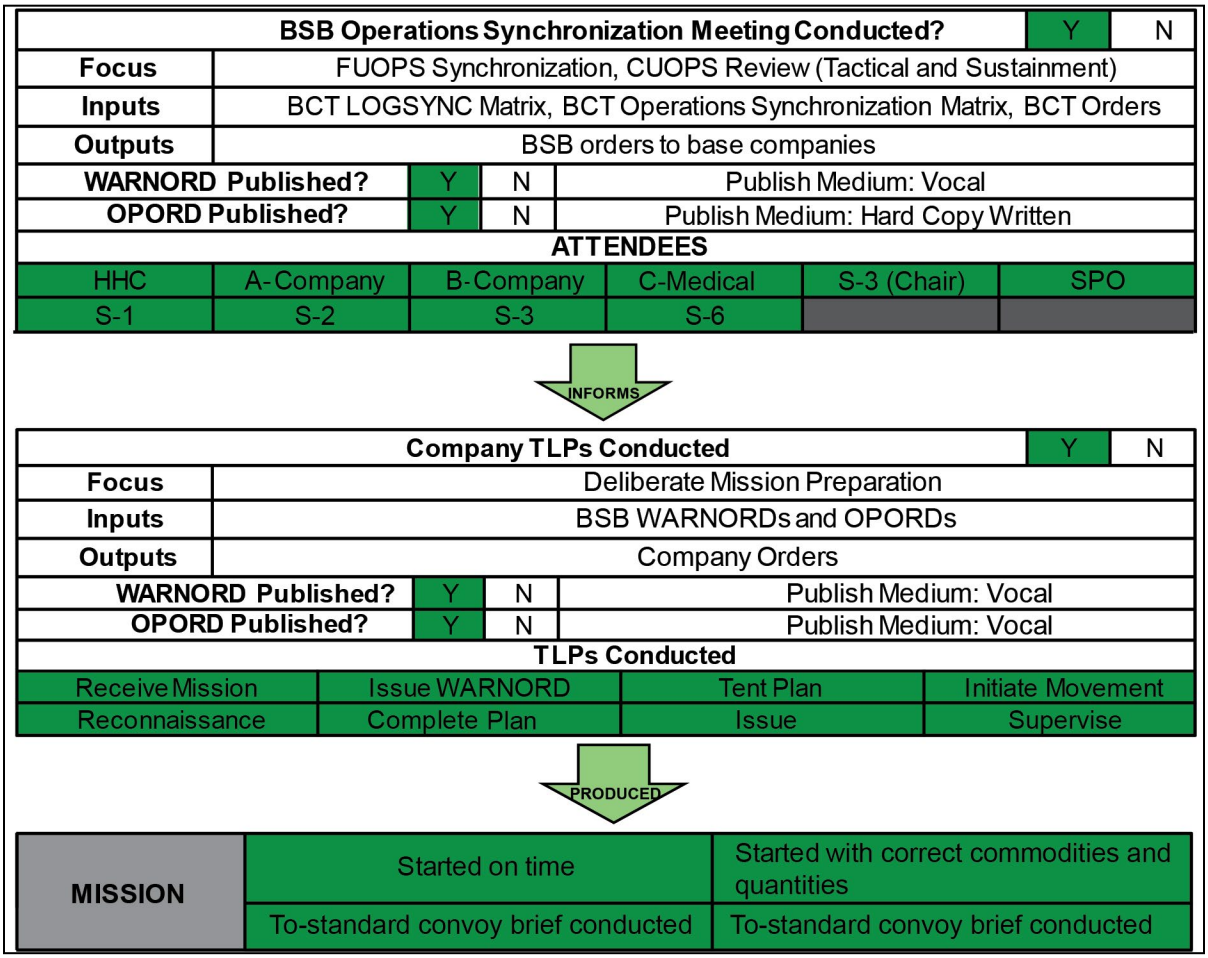

Figure 6-4. BSB Operations Process Informs Company TLP and Facilitates Successful Missions

Figures 6-2, 6-3, and 6-4 depict an example checklist of activities, reports, meetings, inputs, and outputs that all occurred, and should be color-coded green. This ultimately leads to the LOGPAC mission meeting its starting point time, with the correct commodities and quantities, and with all Soldiers on that mission fully prepared with a convoy brief and conducted rehearsals. Figure 6-5 below depicts a situation where sub-par sustainment reports and battle rhythm events lead to sub-standard mission execution.

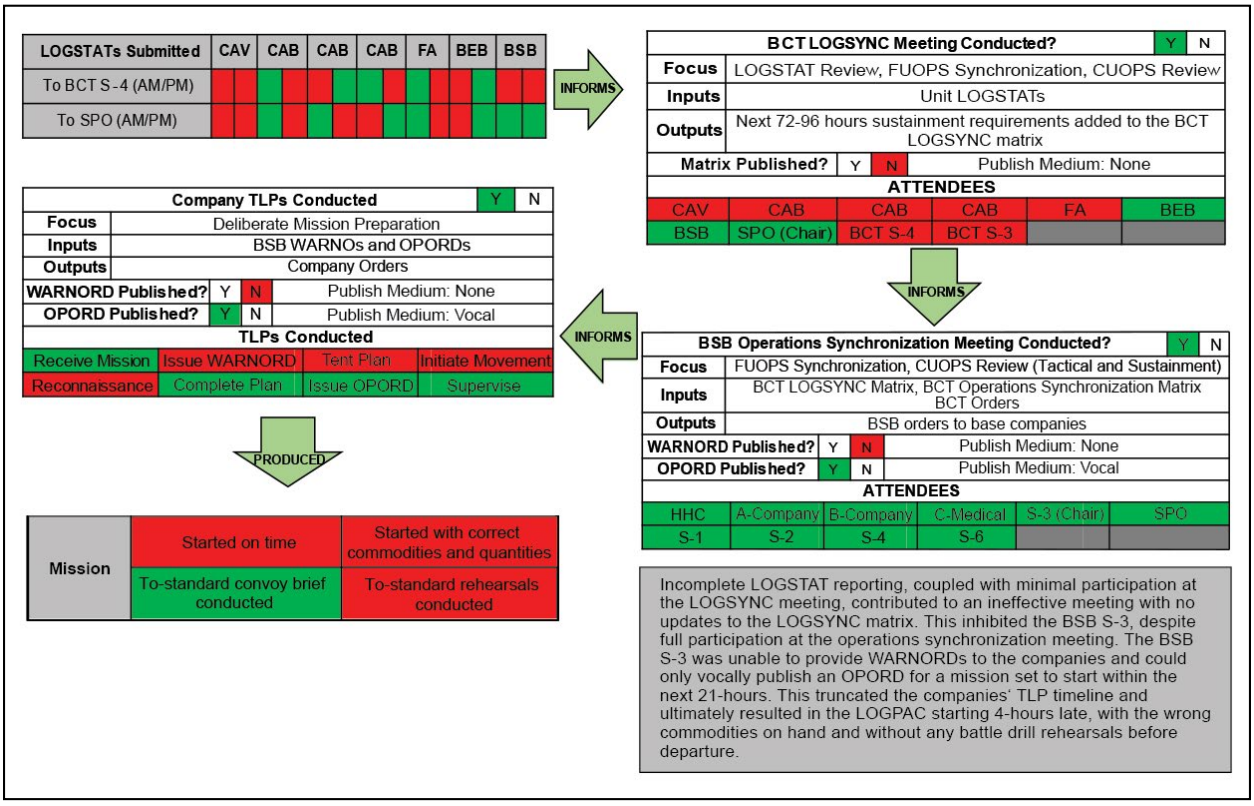

Figure 6-5. Ramifications of Ineffective Sustainment Reports and Battle Rhythm Events

DELIBERATE LOGISTICS PACKAGE PREPARATION: THE N-HOUR SEQUENCE

A well-defined N-hour sequence refers to an established timeline for LOGPAC preparation at the convoy commander and assistant convoy commander level, which may or may not overlap with the platoon/squad/section level. TLP are the processes used by company, platoon, squad, and section leaders to prepare for missions. TLP and any deliberate preparation process both require time. The battalion should implement an N-hour sequence and battle track the execution of that sequence, which helps the companies prepare for execution in two ways. First, it structures the time available to address personnel and equipment issues leading up to mission execution. Second, it manages the time by providing the battalion with situational awareness and early warning if that preparation begins to fall behind. When the preparation sequence begins to fall behind, and if the staff is tracking the sequence to identify when issues arise quickly, then the battalion can surge efforts to get the preparation back on track.

Recommendation

The following N-hour sequence (Table 6-2) should be used, as it is an essential tool to address issues during LOGPAC preparation.

Table 6-2. LOGPAC Preparation N-Hour Sequence

N-24	Convoy commander is notified of mission
N-24 to 20	Convoy commander analyzes personnel, equipment, supplies, and route needed for the convoy
N-20 to 19	Personnel notified of convoy requirements
N-19	Convoy manifest of personnel, equipment, supplies, and route submitted to battalion S-3
N-19 to 17	Preventive maintenance checks and services (PMCS) of equipment performed; necessary equipment replaced or maintenance notified of the need for repairs; all vehicles fueled
N-17 to 13	Commodities loaded, strapped, and recorded on load plan
N-13 to 12	Vehicles staged for convoy departure; equipment and personnel manifest locked at battalion-level; Pre-combat checks
N-12 to 4	Personnel rest
N-4	Personnel wake-up
N-3	Final pre-combat inspections of equipment and personnel; S-2 provides intelligence update to convoy commander
N-2	Convoy brief
N-1	Hard stop to drop equipment that is not full-mission capable for the mission
N-1	Rehearsals
N-Hour	Start point

Note: Convoy preparation on a time constraint affects personnel rest. Other personnel can prepare convoy loads and check equipment while operators rest to allow more time for personnel rest.

CRASHING THE SEQUENCE

A common response to the above preparation sequence is that a cycle that consumes 24-hours is unrealistic, and transporters must be prepared to execute distribution operations in much less time. The notion that a unit in LSCO would have more than 24-hours of notice is lofty. This mindset indicates why sustainment units struggle to get ahead of requirements and often fall into a more reactionary stance when it comes to mission preparation and execution. Units must combat this mindset with additional future operations planning and interfacing with the maneuver planners earlier, to better forecast requirements. Continuous coordination with higher and adjacent units coupled with a solid method for battle tracking within the current operations cell of the BSB headquarters mitigates a number of concerns. Additionally, issuing warning orders and maintaining current running estimates ensures timely, accurate dissemination of information to subordinate units, and ultimately facilitates the successful execution of the N-hour sequence.

Unfortunately, last minute sustainment requirements will develop during LSCO. The nature of armed conflict against a peer or near-peer enemy will ensure that logistical forecasts are never perfect, and sustainers need to react to shifts in the scheme of maneuver and the resulting concept of support. If sustainers become more practiced at deliberate mission forecasting and allow time for more deliberate mission preparation they will be better postured to crash these systems and react to shifts in the scheme of maneuver and the resulting concept of support. The unit that is proficient on deliberate mission preparation and on-time execution is the unit most suited to truncate their preparation and execution timelines down from 24-hours to 12-hours, or even less when the situation warrants.

AFTER THE STARTING POINT: TECHNIQUES FOR SUCCESSFUL LOGISTICS PACKAGE EXECUTION

Most of the focus is on planning and preparing the LOGPAC, but what is done immediately following the starting point can be just as critical to routine mission success.

Maintain Digital and Analog Communications

Many support battalions find themselves unable to allocate enough analog and digital communication systems for LOGPAC vehicles, which limits their ability to maintain adequate communications with their higher battalion and supported units. Support battalions often suffer from a shortage of communications equipment, when compared to maneuver units and what they have on hand. These shortages affect the LOGPAC's ability to maintain situational awareness, react to contact, or coordinate changes without halting the operation. Missing, inconsistent, or unreliable communication systems increase the LOGPAC's time on the road, cause late release points (RPs), and increase the overall risk to the mission. Leaders must assess what systems they have on hand, task organize those systems to facilitate success, and accept prudent risk when necessary. For example, a command post might be able to operate without redundant communications in one area, so they can add a capability to the mobile platform moving on a LOGPAC.

In the end, LOGPACs and their higher command post must maintain contact, but this is only half the fight. Communications with the supported unit must also be considered. BSB LOGPACs will naturally cross multiple battalion boundaries over the course of their mission and DSSB LOGPACs will cross multiple brigade boundaries. Communication with supported units as they are crossing these boundaries is an implied task, but is impossible without the right communications architecture. Once the LOGPAC arrives at its RP location (either a field trains command post/ combat trains command post or logistics release point [LRP]), communications with the supported unit is vital to success.

Commanders should identify the minimum communication requirements for LOGPACs in their SOPs. The goal should be for every vehicle in the LOGPAC to communicate with each other and the company or battalion command post. LOGPACs should have a minimum of two Joint Battle Command-Platform (JBC-P) systems for communication, navigation, movement tracking, and in-transit visibility. A good technique is to identify vehicles that meet the minimum communication platform requirements and track those vehicles as combat power to help commanders understand risk and make decisions.

Logistics Package Defense

Many convoy commanders and assistant convoy commanders have plans to defend the LOGPAC, but few are prepared to execute those plans. Support battalion units struggle with providing first aid, evaluating casualties, reporting casualties, providing ground casualty evacuation, and requesting air medical evacuation after an attack. Also, very few LOGPAC commanders are aware of the exact location of the next echelon of medical care. Survivability is a principle of sustainment that is critical to LOGPAC operations in LSCO. LOGPACs must be able to protect personnel, weapons and supplies, and information. Convoy commanders and assistant convoy commanders must be aware of the enemy threat in the areas they are traversing so they can request and plan for the appropriate number of convoy protection platforms (CPPs) to mitigate risk. During the execution of the LOGPAC, CPP crews are most effective only after well-rehearsed battle drills, which should occur before each and every starting point. The SOP should indicate that CPPs are to support vehicle ratio standards for the battalion. A good tactics, techniques, and procedures (TTP) is for CPPs to have internal communications, radio, and JBC-P communications with the higher command post.

Conduct Resupply Actions Urgently

LOGPACs routinely suffer from a lack of urgency when they reach their RP location. The goal should be to get the LOGPAC in and back off site as quickly as possible. The standard technique for time on target is generally no more than two hours. Time on station is greatly reduced when there is effective communication and a maximum use of exchangeable systems. The convoy commander and assistant convoy commander should communicate their estimated time of arrival to the receiving unit at least 30-minutes before arrival. Often, logistics planners will discuss the LOGPAC start point/RP times during the LOGSYNC meeting. However, unexpected halts affect the LOGPAC's ability to RP on schedule. A well-prepared supported unit knows when a LOGPAC will arrive. If the convoy commander or assistant convoy commander has completed an effective reconnaissance of the support area or LRP setup as a part of their TLP, and have rehearsed the actions on the objective with their LOGPAC, then all the elements can exercise initiative and complete their mission with very little guidance. In LSCO, support battalions need to enhance velocity and reduce LOGPAC time on station by exchanging Container Roll-in/Out Platforms (CROPs), Multi-Temperature Refrigerated Container Systems (MTRCSs), Load Handling System Compatible Water Tank Racks (Hippos), and Modular Fuel System Tank Rack Modules. Exchanging systems enhances mobility by allowing supplies and equipment to remain uploaded for immediate displacement. It also increases the supported commander's tactical flexibility. Many units are reluctant to practice system exchange because of the risk of losing property accountability. However, LOGPAC commanders must take advantage of the tactical efficiencies that come with modular exchange systems. To benefit from the increased velocity of modular exchange systems, brigade and battalion commanders must underwrite the risk of property accountability and damage.

Conducting Night Operations under Night-Vision Devices

It is common for sustainment units to be unprepared for night driving. Significant amounts of LOGPACs occur during hours of darkness. The most obvious consequence of driving using night-vision devices involves accidents. However, inexperienced drivers can also lead to delays and extended hours on the road. These delays may lead to an unscheduled rest period at the RP site, which could throw off the entire scheme of sustainment support if those sustainment assets and crews are needed for follow on missions upon their return. Commanders at home station should prioritize training drivers under blackout conditions whenever possible. Soldiers well trained on driving with night-vision devices can better understand depth perception, identify terrain features, maintain proper speed and distance, and adapt to low light conditions. Ultimately, better trained Soldiers enable more efficient LOGPACs, lower mission risk, and have higher rates of success during LSCO.

Conduct Debriefs and After Action Reviews

Commanders should require their convoy commanders and assistant convoy commanders to debrief the S-2 after completing a LOGPAC. Often, convoy commanders and assistant convoy commanders only report commodities pushed and backhauled to the S-3, S-4, or SPO section, stopping short of a full debrief. By not debriefing the S-2, they leave out potentially valuable information on the status of the area of operations, which could answer intelligence requirements, inform an update to the intelligence running estimate, or enhance future mission analysis. Guidance for the mission debriefings should be in the SOP and follow the format of a mission briefing: review the route traveled, mission objectives, and commodity closure reporting. The debrief information collected must be analyzed, updated, and disseminated before the next mission.

Conduct Post-Mission Operations

Because of long hours of operation, fatigue, and the lack of supervision, LOGPACs often return from missions and do not conduct post-mission operations. In LSCO, the simplest LOGPACs often lead to operations that extend past the planned timeline. Unit SOPs, commander's guidance, and the warning and operations orders should have post-mission tasks built into the execution timeline, which should contain priorities of work for when LOGPACs return. Equipment PMCS, destruction of classified material, debriefs, loading trucks, and staging vehicles for the next mission are some of the post mission requirements that Soldiers must complete before the crew rest period, to ensure the unit is ready for future operations. The focus upon the LOGPAC's return should be on regenerating combat power and readiness. A good technique for leaders is to consider tasking rested Soldiers with post-mission operations to prepare equipment for future mission requirements.

When the Logistics Package is out

Units should avoid forward momentum coming to a grinding halt the minute a LOGPAC makes an on-time start point. There is always another mission for which to prepare. While the LOGPAC is out, that particular mission may be in the execution time horizon, but the companies should be working their TLP for the missions coming in the next 24- and 48-hours, informed by the BCT LOGSYNC and the S-3 operations synchronization. A successful method for keeping the planning, preparing, and executing process moving along is aligning a unit's distribution assets and crews into an A-team, B-team, and C-team. For example, while the A-team executes a LOGPAC, the B-team may be on a rest cycle before their LOGPAC's starting point. Simultaneously, the C-team prepares the B-team's loads. When the A-team returns from their mission, they begin preparing the loads for C-team's upcoming mission as C-team goes into a rest cycle. Company commanders and first sergeants must work their troops-to-task diligently, nested with their TLP, to make this division of labor work.

SUMMARY

Because of shortfalls in mission preparation, units training for LSCO struggle to execute sustainment on-time and as planned, based on the supported scheme of maneuver. Shortfalls in mission preparation result from the higher echelon failing to forecast far enough out and lengthen the planning horizon. An operationalized planning cycle that flows from brigade planning and synchronization to battalion planning to company and platoon TLP, enabled by a sustainment battle rhythm and mission orders, will increase the likelihood of success. A deliberate and battle-tracked N-hour preparation sequence will facilitate success via structured time management. The unit that is disciplined in this endeavor is the unit that is most prepared to modify their system and still enjoy mission success. Rising to the occasion when the unexpected happens, and shortening preparation sequences to meet emerging and changing sustainment requirements, is always key to success. But this can never be the primary course of action. Sustainment organizations must develop systems and adhere to those systems in a disciplined manner to consistently prepare for success in the fight to come.

CHAPTER 7

Forward Support Company Employment

CPT Terry Barnhouse, CPT Christopher Mauldin, CPT Kyle Myers, CPT Matt Hughes, and MAJ Jerod Farkas

Within a brigade combat team (BCT), there are enough capabilities for sustainment during large-scale combat operations (LSCO). The problem is that there are not enough capabilities in any one formation for all phased requirements. This becomes problematic when the deployment of personnel and equipment is less than eighty percent. Given that the BCT has three echelons of support to synchronize, it is important to have a clear sight picture to understand the shortfalls and surplus needed to task organize assets between the forward line of own troops (FLOT) and the brigade support area (BSA).

Since forward support companies (FSCs) are organic to the brigade support battalion (BSB), and assigned to their supported unit, it is necessary to understand the relationships between the two higher headquarters and how to execute the brigade's support plan. This chapter focuses primarily on the combined arms battalion (CAB) FSC setting the scenario for evaluation, since the nuances between different FSCs are outside the scope of this chapter.

THE TRAINS CONCEPT

Before discussing how to task-organize and array the FSC across the battlefield, it is essential to define the trains concept. Army Techniques Publication (ATP) 4-90, *Brigade Support Battalion,* 18 June 2020, defines the trains concept as, "…a grouping of personnel, vehicles, and equipment that provide sustainment to the battalions and subordinate companies of the BCT." This definition is subject to interpretation, since the phrase "provide sustainment" can take on many meanings. This chapter will view trains from a capability standpoint. Classically, trains consisted of logistical elements that provided materiel to their supported units through a transportation medium. In a LSCO environment, BCTs should exercise echeloned support in battalion trains that are broken into three smaller formations: field trains, combat trains, and company trains. This practice of trains employment is only at the battalion level and below, as brigades and higher utilize a support area concept. Trains should be arrayed across the battlefield to position between their higher echelons of support and their supported unit, per their commander's guidance.

UNIT COMMAND POST

When determining the composition of a battalion's field trains command post (FTCP) and combat trains command post (CTCP), it is essential to define the command post. Field Manual 6-0, *Commander and Staff Organization and Operations*, 05 May 2014, states that, "a command post is a unit headquarters where the commander and staff perform their activities." Primary functions of a command post include:

- Maintaining running estimates
- Maintaining the common operating picture
- Controlling and assessing operations
- Coordinating with higher/lower/adjacent units
- Supporting the commander's decision-making process.[1]

This suggests that when utilized, the FTCP and CTCP should have representation from the battalion's sustainment cell or the S-1 (personnel) and S-4 (logistics) sections.

FIELD TRAINS COMMAND POST

When developing the composition of FTCPs or CTCPs, consider the required capability at each location. It is crucial to give straightforward tasks and purpose to FTCPs. These tasks and purposes, coupled with requirements, provide a basis for occupying the FTCP. The following is a list of FTCP requirements. FTCPs should:

- Synchronize and integrate the BCT concept of support,
- Coordinate logistics requirements with the BSB support operations (SPO) section,
- Configure logistics packages (LOGPACs),
- Coordinate personnel services and replacement operations,
- Forecast and coordinate future sustainment requirements, and
- Coordinate retrograde of equipment and personnel.[2]

Current Army doctrine is ambiguous. Who should fill the officer in charge (OIC), staff, or commander roles at the FTCP is left to each unit, which leads units to find varying solutions to fill these roles. For example, ATP 3-90.5, *Combined Arms Battalion*, 15 July 2021, states that the FSC should be responsible for the FTCP, while Field Manual 3-96, *Brigade Combat Team*, 19 January 2021, and ATP 4-90 both mention that the headquarters and headquarters company (HHC) commander or a designated representative should control the FTCP. Regardless, the FTCP OIC's task is to coordinate the required services and distribution of commodities to their supported battalion. When the BCT establishes the personnel holding area within the BSA, it is advantageous for battalions to assign an S-1 representative to the FTCP to work at the personnel holding area and process personnel replacement operations. Battalions can also assign an S-4 representative to their FTCP to track and configure LOGPAC requirements and serve as a liaison to the SPO office for logistics status (LOGSTAT) reporting.

The FTCP should also utilize FSC personnel in the field trains to facilitate sustainment integration.[3] These can be comprised of various military occupational specialties, depending on the operation, but most commonly include a 92A automated logistical specialist, a 92Y unit supply specialist, and a 91X maintenance supervisor. These personnel assist the OIC and staff with interfacing between the CTCP and BSB. The 91X utilizes the battalion equipment status report to keep the SPO maintenance officer informed on the availability of combat power, while also coordinating with the 92A to resource repair parts through the supply support activity. Additionally, the 91X coordinates through a non-mission capable (NMC) common operational picture (COP) to request assistance with recovery operations and commodity shop support. The 92Y assists with the request and preparation of supplies, including Class V munitions; Class III petroleum, oil, and lubricants; Class I subsistence, water, and ice; and Class IV barrier materiel.

Commanders determine the disposition of the FSC's support capabilities at the FTCP based on time and distance between nodes, the availability of personnel and equipment, and enemy threats. For example, commanders often position their sustainment assets as far forward as possible to shorten supply lines, which increases responsiveness and keeps enough distance from the FLOT to retain survivability. The CTCP is typically four kilometers, or one terrain feature, behind the FLOT. The FTCP is generally in or close to the BSA, about 15 kilometers behind the CTCP. One

option is to put either a portion or the whole distribution platoon in the FTCP, which would allow for supply point distribution and reduce the coordination requirements of logistics release points or unit distribution, simplifying the battlefield geometry. However, this method starves the CAB commander of operational reach. It is preferable to have the entire distribution platoon in the CTCP and maximize the use of the brigade's distribution company.

COMBAT TRAINS COMMAND POST

CTCP requirements include:

- Tracking the current battle,
- Controlling sustainment support,
- Monitoring supply routes,
- Controlling the sustainment flow of materiel and personnel, and
- Coordinating the evacuation of casualties, equipment, and detainees.[4]

CTCPs generally consist of the battalion sustainment cell, the FSC, and portions of the HHC, including the maintenance collection point (MCP) and the battalion's aid station. The CTCP keeps pace with the supported battalion, and requires consistent detailed planning to change posture between static, semi-mobile, and mobile.

Just like the FTCP, there is ambiguity in doctrinal guidance for the OIC of the CTCP. ATP 3-90.5 states that the HHC commander should have the responsibility of the CTCP, FM 3-96 states that it should be the battalion S-4, and ATP 4-90 suggests the FSC commander be responsible for the CTCP. All three officers have strengths to bring to this command post. The FSC commander is the senior logistician in the battalion, and best able to direct sustainment operations. The S-4 is nested into the battalion command and staff, and the sustainment cell provides a fallback location for the battalion's main command post if it is overrun or destroyed. The HHC commander, typically a maneuver officer, is best suited to manage location security.

Since the CTCP serves as the primary location for planning and coordinating battalion sustainment operations, many units position most of their FSC assets at the CTCP, including their Class III (bulk) and V, to facilitate uninterrupted support to the maneuver units. Most FSCs place the preponderance of their maintenance assets forward at the CTCP, since the authorization of mechanics for combat systems are only in the FSCs.

The combat trains generally serve as the link between the support area and the company trains. The planning and synchronization of battalion LOGPACs start at the CTCP as operations designed to reduce the time and distance required to distribute commodities. Battalions may decide to position their supply sergeants at the CTCP to serve in a liaison capacity. The supply sergeant can provide an accurate status of their unit's supply commodities, coordinate and tailor LOGPAC requirements, and ensure high priority Class IX parts make it from the MCP to their field maintenance team (FMT).

COMPANY TRAINS

At the company level, trains provide limited support capabilities as far forward as possible, typically within a kilometer of the FLOT. The company first sergeant is generally responsible for the company trains. Often, the company trains consist of the unit's first sergeant, supply personnel, culinary specialists, and the FMT. The FMTs consist of maintainers who assist the units with maintenance operations. Regarding Class I (rations), the FSC is equipped with assault kitchens, designed to be attached and capable of feeding company-sized elements.

LOGISTICS PLANNING

The FSC commander is the senior logistician in the CAB, and assumes the role of the sustainment coordinator at the battalion level to execute the support plan. This requires integration with the battalion sustainment cell during planning to assist with option development for the command team. At the onset of any operation, the sustainment cell develops or updates their estimates to ensure understanding of all capabilities and requirements before developing the concept of support. The concept of support provides the location of support nodes throughout the CAB's area of operations, the logistical priorities, what capabilities will be present, the forecasted requirements, and distribution methods. All distribution must be planned in detail, with consideration for how commodities are exchanged between the BSB, stored at the battalion trains, exchanged with the company trains, and ultimately distributed to the end-user.

Logistic planning becomes increasingly difficult once the CAB crosses the line of departure and arrays the battalion's command posts. The tyranny of distance, while trying to battle track the current fight, makes future planning difficult. The unit can rely on the base order and Annex F to accomplish routine tasks, but dynamic changes require staff planning and fragmentary orders. Depending on the location of the battalion executive officer, S-4, and FSC commander, this may have to occur through distributed means. However, in-person planning enables collaboration and shared understanding. This is especially important when working with other warfighting functions to consider how logistic perspective influences plan development.

If the planner is the only one that knows and understands the plan, it is not a good plan. The battalion rehearsal is a planning tool that validates the plan and ensures everyone can visualize how the CAB will execute it over time and space. The CAB will most likely execute a combined arms rehearsal and conduct a sustainment rehearsal if time allows. If time does not allow, it is critical that each battalion trains node has a speaking role and articulates who is where, doing what, and when.

Before crossing the line of departure, the battalion trains rehearses command post operations with prescribed communication platforms, link-up procedures, and commodity exchange operations. This ensures all assets required to complete the mission are available and trained before execution. Once the CAB departs its tactical assembly area, resourcing specialty equipment (hoses, nozzles, cables, etc.) becomes increasingly difficult and can slow or halt operations.

LOGISTICS SYNCHRONIZATION

Keeping the command team informed on the status of logistic estimates enables informed decisions. To drive the operation, the sustainment cell produces estimates for the operation through planning factors applied to available assets during the planning phase. These estimates are based on historical data and assumptions and are not going to account for all environmental factors.

The sustainment cell has two feedback mechanisms to gauge the accuracy of the estimates: distribution execution debriefs and LOGSTATs. When a LOGPAC completes unit distribution, or a supported company completes supply point distribution, the sustainment cell tracks the execution of the distribution (start point, release point, and time on station) and the transfer of planned commodities. This informs the logistics running estimate and enables the evaluation of unforeseen environmental factors and refinement of the plan. Additionally, LOGSTATs are exchanged with the supported companies to provide further refinement.

The CAB confirms statuses and plans through a logistics synchronization (LOGSYNC) meeting with information from the distribution execution debriefs and LOGSTATs. The sustainment cell uses this interaction to provide supported units with the 24-, 48-, and 72-hour plans based on the LOGSYNC matrix, any changes to the logistic operations plan, and key considerations. The supported units confirm the plan is tenable while briefing their current and planned locations, company operations, and key highlights with their LOGSTATs.

Information provided through the company LOGSTATs and refined at the LOGSYNC meeting helps produce and maintain a logistics COP (LOGCOP). The battalion main and the CTCP both display the LOGCOP through digital and analog systems. This creates shared understanding within the sustainment cell and enables synchronization across warfighting functions. Unit locations and current commodity statuses are depicted on a map as a visual aid for the commander make future decisions based on the current posture. This information is relayed back to the FTCP representative in the BSA for integration into the brigade's LOGCOP.

MANAGING COMBAT POWER

The CAB must hold a daily maintenance meeting during LSCO to track operational readiness rates and inform decisions based on current and projected combat power status. For reporting purposes in the battalion main and higher, the sustainment cell coordinates with the staff to develop a critical fleet list to enable acute battle tracking of essential equipment. Given the availability of time and capacity to communicate, the meeting can also focus on all non-mission capable equipment and other reportable areas, like external support requirements or notifications requiring action.

Understanding combat power availability is the focal point of this daily meeting, but CAB processes to retain and rebuild combat power should also be addressed. The most crucial maintenance process is operator preventive maintenance checks and services (PMCS). Required PMCS completion is tracked to gauge the accuracy of the equipment status report. By using the Department of the Army (DA) Form 5988-E, *Equipment Maintenance and Inspection Worksheet*, 01 March 1991, leaders can ensure that the PMCS is complete. Any faults identified by the FMT that cannot be remedied on the spot must be reported. This enables leadership to battle track what is happening on the ground (reporting should be done through the source of record, Global Combat Support System-Army). Once faults are validated, the team closely monitors part availability to develop the projected rebuilding of combat power.

The battalion executive officer chairs the daily maintenance meeting, providing priorities and directing the allocation of resources. The battalion maintenance control section reports current statuses while company executive officers provide updated status and projected completion timelines. The information is captured and provided to the CTCP, battalion main command, and FTCP for the combat power slant.

Like the LOGCOP, the CAB battle tracks maintenance nodes and NMC equipment through an NMC COP. This drives decisions on the pass-back of equipment based on repair capacity at each node, and the displacement of nodes based on recovering equipment forward.

SUSTAINMENT COMMUNICATION PLAN

Communicating across the logistic nodes to battle-track LOGPACs, update current LOGSTATs, conduct the LOGSYNC and maintenance meetings, distribute the LOGSYNC matrix, and share the LOGCOP is complex and requires a well thought out primary, alternate, contingency, and emergency (PACE) plan to be reliable. Given the available resources, the capability of the equipment, and the classification limitation on some systems, it is imperative to plan and rehearse the communication architecture. Exercising all of the systems within the sustainment PACE plan must occur before the brigade departs, including running meetings and sending reports to resolve all issues. When communicating digitally, sent does not mean received. Ensure the receiver acknowledges the message to confirm receipt.

SUPPORT CAPABILITIES

The FSC provides direct support to the CAB for field feeding, distribution, and field maintenance and comprises a company headquarters, field feeding section, distribution platoon, and maintenance platoon. The FSC provides up to three remote feeding sites, up to 16 Container Roll-in/Out Platforms (CROPs) of ammunition and general supplies, 30,000-gallons of fuel, and field maintenance support for the CAB and FSC equipment.

The FSC field feeding section has one central food preparation site with a containerized kitchen and up to three remote feeding sites with assault kitchens. The containerized kitchen can provide three meals a day for up to 800 personnel in a single location of either unitized group ration (UGR)-A or URG-heat and serve. The assault kitchens can provide a mobile heat-on-the-move kitchen, preparing and serving up to 250 UGR-heat and serve meals in separate and remote locations. Depending on the tactical situation, assault kitchens can collocate two trained food service specialists with the company trains or with the rest of the field feeding section in the battalion trains. The field feeding section also has a 400-gallon Water Buffalo and an 800-gallon Camel with potable water to support cooking requirements. A Multi-Temperature Refrigerated Container System (MTRCS) and a CROP provide storage for perishable and semi-perishable rations, and can support up to 800 Soldiers for three days. The field feeding section cannot transport the MTRCS and CROP on its own, and is therefore dependent on the distribution platoon to displace them from one kitchen site to the next.

The distribution platoon consists of three distribution sections that provide ammunition, fuel, and supplies for up to three CAB locations. The distribution platoon has eight M1120A4 Load Handling Systems (LHSs) with M1076 Palletized Load System (PLS) trailers, six 2,500-gallon M978A4 Tankers with 2,500-gallon M107 Tank Rack Modules (TRM) on PLS trailers, and one 5,000-pound capacity Light Capability Rough Terrain Forklift (LCRTF). Two of the distribution sections have three LHSs with PLS trailers while one has two of each, but each distribution section has two M978A4s with two TRMs on PLS trailers. In total, the distribution platoon can carry up to 30,000-gallons of fuel and 14 twenty-foot equivalent units (TEUs) or 128 pallets positions (single stack) to support the CAB in a single lift.

The maintenance platoon comprises the maintenance control section (MCS), the maintenance section, the service and recovery section, and the FMTs for each line company. The MCS coordinates pass back maintenance and determines when to surge maintenance capabilities from the maintenance platoon to cross friction points. The MCS also manages the CAB's shop stock for the HHC and FSC and provides oversight of each line company's shop stock. The MCS provides the hub for logistics data with the very small aperture terminal (VSAT). When VSAT is used with the Combat Service Support Automated Information Systems Interface (CAISI), it provides the FMTs with a wireless local area network forward of the CAB MCP.

The maintenance section provides field-level maintenance to the HHC and FSC and non-combat system maintenance for the line companies. The service and recovery section provides allied trades for the CAB, recovery support to the HHC and FSC, and backup recovery support to the FMTs. Each line company has an FMT that provides on-site contact maintenance support to its supported company forward of the CAB MCP. Each FMT has an M88A2 armored recovery vehicle, along with a Forward Repair System and a contact truck, to conduct on-site maintenance and Global Combat Support System-Army access with the Maintenance-External Unit Maintenance Team system. The FMT can collocate with the rest of the maintenance platoon at the CAB MCP with a recovery vehicle and contract truck operating within the company trains. The whole FMT can work out of the company trains to perform maintenance as forward as possible.

SUPPORT REQUIREMENTS

By design, BCTs carry three days of supplies. One day of supplies is with the systems in the BCT formation, while the other two days of supplies, known as sustainment loads, are mobile. One is located with the FSC and the other with the BSB. The FSC for a CAB can transport 14 TEUs in a single lift when their modified table of organization and equipment (MTOE) is 100 percent filled. During displacement operations, the FSC has 10 of the 14 TEUs allocated for the movement of Class I (two TEUs), Class IV (one TEU), Class V (six TEUs), and support equipment (one TEU). This leaves four unallocated TEUs during displacement operations. When static, the FSC has six CROPs loaded up, ready to support Class V. Otherwise, the FSC has eight TEUs available for the transportation of Class I for the companies, additional Class III when loaded with TRMs, additional Class IV for obstacles, and Class IX to support the FMTs operating forward of the CAB MCP.

CONCLUSION

Arraying the CAB FSC assets across the battlefield, managing the separate nodes and reporting requirements, and fully understanding the capabilities and requirements is challenging. However, it must be trained if it wants to survive the first contact in LSCO. Synchronizing the coordination and movement of commodities between the BSA and the company trains becomes increasingly difficult as the lines become stretched and the availability of logistics assets declines. A clear understanding of each role and responsibility provides the best opportunity for success.

Endnotes

1. Field Manual 6-0, *Commander and Staff Organization and Operations*, 05 May 2014.

2. ATP 4-90, *Brigade Support Battalion*, 18 June 2020.

3. Ibid.

4. Ibid.

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CHAPTER 8

Air Movement Missions

CPT Tyler Ford, CPT Benjamin Ingell, and MSG Paul Mendez

THE AIR MOVEMENT REQUEST PROCESS

The air mission request (AMR) process functions best when it includes the brigade aviation element (BAE), support operations (SPO) officer, A-company/distribution company commander of the brigade support battalion (BSB), and requesting unit S-4. The SPO officer should maximize the use of ground transportation assets to fulfill movement requests based on closer destinations or routes with fewer restrictions. Concurrent planning with the BSB SPO section enables the BAE to prioritize AMRs for mission destinations that are more difficult to reach (see Figure 8-1).

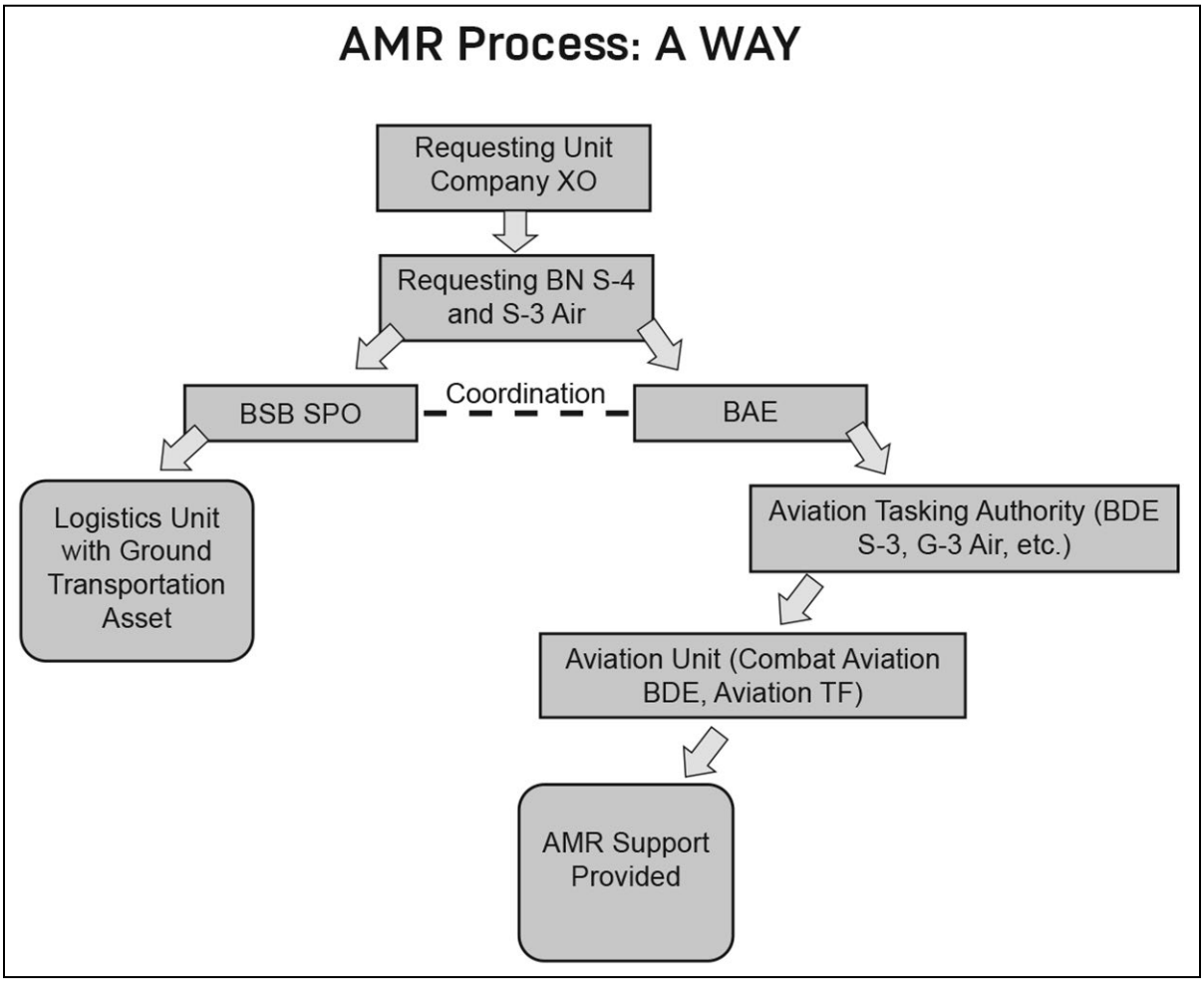

Figure 8-1. AMR Process

UNIT RESPONSIBILITIES

For an AMR process to be effective, aviation units must create shared understanding of the responsibilities amongst the supported unit, the supporting aviation unit, and the receiving unit.

The supported unit is responsible for the selection, preparation, and control of the pick-up zone (PZ). The supported unit furnishes the required equipment for the move (slings, straps, clevises, or other sling-load equipment). Supported units check for rigging deficiencies and ensure equipment is not in excess of an aircraft's maximum load capacity. The supported units coordinate for the backhaul of the rigging and sling-load equipment.

The supporting aviation unit provides the supported unit with technical advice, and ensures that requested cargo falls within aircraft load limitations. This unit is also responsible for advising both the supported unit and receiving unit on the suitability of their PZs and landing zones (LZs). The aviation unit provides the components for securing internal cargo for transportation within the aircraft. The aviation unit also provides assistance for recovering and returning sling-load equipment. If it has the ability to do so, the aviation unit should provide a liaison officer to coordinate with the supported unit. The aviation unit is also responsible for ensuring that the transporting aircraft will be at the PZ at the scheduled time.

The receiving unit is responsible for the selection, preparation, and control of the helicopter landing zone (HLZ). The receiving unit provides the trained ground crew (air assault, sling load inspector qualified, or pathfinder trained personnel) to guide the aircraft into the HLZ and de-rig the load. The receiving unit provides forklifts or other materials handling equipment (MHE) for unloading the aircraft under the approval/guidance of the aircraft's crew. The receiving unit takes control of sling-load equipment and inspects any loads of equipment being backhauled from the HLZ to another location.

LANDING SITE SELECTION

In determining where to place an HLZ, the receiving unit should consider the site selection criteria from Technical Manual (TM) 4-48.09, M*ultiservice Helicopter Sling Load: Basic Operations and Equipment*, 07 July 2012. The site selection criteria listed are security and concealment, convenience, and size. Security and concealment refer to having an HLZ in a location that is masked by terrain or wooded areas — away from enemy observation. It is convenient to have the available trained de-loading/de-rigging personnel at the HLZ and the required MHE to store the cargo after it has been downloaded from the aircraft. Size refers to the number of landing points within the HLZ, and the minimum required distance between each of those landing points measured from the center of the HLZ (See Table 8-1 for required landing point sizes).

Table 8-1. Required Landing Point Sizes[1]

Helicopter Size	Minimum Distance of Landing Point	Type of Helicopter/Operation
1	80 Feet (25 Meters)	OH-6/OH-58
2	125 Feet (25 Meters)	UH-1/H-65
3	160 Feet (50 Meters)	UH-60/H-2
4	264 Feet (80 Meters)	CH-47/CH-53/H-3
5	328 Feet (100 Meters)	Sling Load Operations
6	410 Feet (125 Meters)	Sling Load Long Line Operations
7	492 Feet (150 Meters)	Sling Load Night Vision Goggle (NVG) Operations

When the BSB SPO section, BAE, requesting unit, supporting aviation unit, and receiving unit maintain their respective responsibilities in the coordination process, AMRs are an efficient method of moving personnel and equipment around the battlefield. Effective preparation and control at PZs/HLZs can make air movements into expedient deliveries of mission demanded commodities.

Endnote

1. TM 4-48.09, *Multiservice Helicopter Sling Load: Basic Operations and Equipment*, 07 July 2012.

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CHAPTER 9

Forecasting Sustainment Requirements and Producing a Logistics Estimate

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Forecasting logistic requirements accurately is a crucial and often overlooked process in the mission analysis phase of the military decision-making process (MDMP). Brigade combat team (BCT) logistics planners tend to submit the exact requests day-to-day, instead of conducting analysis based on future mission factors such as requirements, consumption rates, time, and distance. Many BCTs rely on a "swag" or "autofill," and depend on a default push of supplies from higher echelons to satisfy requirements. They do little to no analysis of what the requirements actually are. This failure to forecast often results in a backhaul of large quantities of supply, wasting man-hours and putting Soldiers at increased risk. It also fails to anticipate the requirements for changing missions, such as a transition from defensive to offensive operations. Although occasionally effective in sustaining units for the short term, this methodology is overall inefficient and not sustainable.

Forecasting support requirements begins in mission analysis and is the most critical mental process for the logistics planner. For logistics planners, mission analysis should be a focused effort to define the current operational environment in terms of capabilities, requirements, assessments, and mitigation. In short, what do I have, what do I not have, what do I need, and how do I get what I need? With that understanding, accurate forecasting is founded on standard logistics estimation tools that analyze distance and usage hours. This forecasting is derived from the scheme of maneuver, from calculated consumption rates to task organized equipment densities. This results in a logistics estimate that mitigates shortfalls and eliminates unnecessary backhaul.

Historical data is a good starting point to develop an estimate for a new operation, but should not be the primary forecasting method. Historical data is valuable only when an operation is mature enough for the historical data to apply. For example, consumption rates for an attack in a forested temperate environment will differ vastly from one in an arid desert. Training data, while historical, does not wholly mimic deployed combat operations.

The following are procedural estimates and examples for each class of supply based on published consumption rates. Each class of supply is listed in numerical order, not in order of importance.

CLASS I: SUBSISTENCE

Forecasting Class I meals and water is crucial for sustainment planning. Since it is primarily population based, Class I is not as influenced by the maneuver operation as most other supply classes are, which provides more consistency to planners.

Meals

Logistics planners must forecast the number of meals needed to sustain the force based on the headcount of Soldiers multiplied by the ration cycle of meal type, multiplied by the issue cycle of how often bulk rations are delivered. There are three categories of meals: meals, ready to eat (MREs); unitized group ration (UGR)-A option; and UGR-heat and serve. When multiple ration types are used, planners must account for each type individually. For planning purposes, see Table 9-1 for Class I MRE and UGR weight and pallet conversions.

Table 9-1. Class I MRE and UGR Weight and Pallet Conversion

Class I Transportation Planning Factors: MREs	
Ration Package	Weight
Meals per case	12
Cases/pallet	48
Weight/case	22.7 pounds
Weight/pallet	1089 pounds
Class I Transportation Planning Factors: UGR	
Ration Package	Weight
Servings/module	50
Modules/pallet	8 (400 servings)
Weight/module	129 pounds
Weight/pallet	1038 pounds
Pallet size	40 inches by 40 inches by 42 inches

Meal Example. If 100 Soldiers are on an M-M-M ration cycle with an issue cycle of "2," the total MREs needed would be 600 meals (100 headcount times 3 meals per day times 2 days). Since meals are transported by cases/modules and pallets, the value would be converted using Table 9-1. The 600 meals would equate to 50 cases, or one pallet of MREs plus two additional cases. If conducting phased operations, the issue cycle should cover each phase, so a four-day phase would utilize an issue cycle of "4," pending unit haul and storage capabilities.

Planners should adjust their total values to account for variances and unforeseen changes. Ten percent of what is planned should be added to account for unforeseen changes, such as an unexpected unit attachment. For example, if planning indicates 40 MREs, then 10 percent (four) should be added to the number to make 44 total MREs. Additional meals may also be required for humanitarian aid, such as internally displaced personnel or personnel holding (e.g., detainees or enemy prisoners of war).

There are two primary considerations when transporting Class I meals: storing perishable items and transporting cooked UGR meals. Units must consider using ice and Multi-Temperature Refrigerated Container Systems (MTRCSs) when incorporating perishable items into the ration cycle. Failure to do so could result in supplements being spoiled and wasted. Module 3 UGRs are the only meals that need cold storage to remain safe to consume.

Time must be considered when cooking UGR meals. Once the UGR is at the correct temperature, it must be consumed within four hours. Planners should know where a unit's assault/containerized kitchen is located in relation to the forward troops. A safe time estimate is 20-35 minutes of upload and download time (40 to 70 minutes total), plus actual time traveled.

Water (Bulk, Ice, and Decontamination Planning)

Bulk Water

During the Fiscal Year 2020, an average of 25,988 gallons of bulk water was backhauled between the forward support company (FSC) and brigade support battalion (BSB) per rotation at the National Training Center, resulting in unnecessary utilization of personnel and equipment.

Bulk water planning follows the normal MDMP in terms of identifying capabilities, requirements, and shortfalls. The BCT support operations section and the brigade or battalion S-4s can calculate available water capabilities at echelon based on asset availability to understand the maximum water capability at each unit. Table 9-2 shows normal water consumption factors that can be used for planning.

Table 9-2. Water Consumption Factors in Gallons/Person/Day

Use	Climate			
	Temperate	Tropical	Arid	Arctic
Drinking Water	1.5	3.0	3.0	2.0
Personal Hygiene	1.7	1.7	1.7	1.7
Field Feeding	2.8	2.8	2.8	2.8
Heat Injury Treatment	.1	.2	.2	.1
Vehicle Maintenance	--	--	.2	--
Standard Planning Factor	6.1	7.7	7.9	6.6

Bulk water planning is similar to Class I meal planning in that it is calculated on a per-person, per-day cycle. Planners should use this in their initial analysis for forecasting requirements. Adjust the water consumption requirements with historical data as the operation progresses. Mortuary affairs operations are an additional planning factor at the BSB level. Four gallons per set of remains are needed for processing.

Ice

Ice is forecast on a per-person, per-day basis, and is based on the operational environment. Recommended planning factors in pounds per bag per person are arid-six, tropic-five, temperate-four, and artic-three. Bag size will determine how many bags per pallet are needed (for example, 103 20-pound bags fit on one wooden pallet). MTRCS are used for ice storage, with 14 pallets fitting into one MTRCS.

Decontamination

Decontamination operations require a substantial amount of water for each contaminated Soldier and vehicle. The unit decontamination crew conducts a vehicle wash down in the unit area of operations. For operational decontamination, the vehicle wash-down crew may use 100 to 150

gallons of hot soapy water on each vehicle to wash off gross contamination. For combat vehicles such as the M1 series armored fighting vehicles, 200 gallons of water or more may be required per vehicle. For detailed equipment decontamination, the required gallons are higher.

CLASS II: CLOTHING AND EQUIPMENT

Successful Class II forecasting resides at the unit supply level, where inventories are conducted on a regular basis to avoid a stock-out of critical office supplies, clothing, and equipment. Soldiers deploy with an initial load of clothing and equipment, and are fielded theater-specific equipment during the unit's reception, staging, onward movement, and integration. It is difficult to forecast Class II in relation to phases of the maneuver operation, as each echelon will consume supplies at different rates. Planners should be cognizant of the need for Class II, and work in close coordination with the BSB's supply support activity (SSA) to determine the transportation requirements needed for Class II requests.

CLASS III: PETROLEUM, OIL, AND LUBRICANTS

Class III can affect the success of any unit conducting combat operations. Class III is categorized into bulk (Class III [B], including gasoline, diesel, and aviation fuel) and packaged (Class III [P] which includes greases, oils, and lubricants).

Bulk Class III

Class III (B) is a complex class of supply to forecast because of the different types of vehicles, consumption rates, terrain, and hours of use. Determining bulk fuel carrying capability is the same as bulk water. In other words, multiply available assets by their capacity amounts. Storage assets should be in accordance with Table 9-3, as expansion must be considered to avoid damage to personnel and equipment. Determining Class III requirements requires detailed analysis of the concept of the operation. Forecasters determine estimated fuel usage for each vehicle using the following formula: Number of vehicles times gallons per hour (GPH) consumption times anticipated duration of the operation.

Table 9-3. Bulk Fuel Storage Capability

Fuel Planning Factors							
	Bulk Tanks	M1062 7.5K	M969 5K	M978	Bulk Tanks	M1062 7.5K	M969 5K
Usable Capacity		7,425	4,800	2,400	500	500	2,400/ tank
Bulk Fill Rate	600	600	600	300	125	125	600
Self-load Rate	600		300	300			
Retail Flow per Nozzle	50		50	50		50	
Number of Nozzles	2		2	2	1	2	

An example of Class III bulk is a mechanized infantry company comprised of 14 M2 Bradley Fighting Vehicles conducting a one-day operation on cross-country terrain. In a 24-hour period, they are expected to be at a tactical idle for 16 hours, and traverse cross-country for 8 hours. Expected fuel consumption at idle would be 14 x 1.4 x 16 = ~314 gallons. Expected fuel consumption during cross-country operations is 14 x 18 x 8 = 2,016 gallons. Total estimated fuel consumption for the operation is 2,330 gallons. For planning purposes, see Table 9-4 for vehicle consumption rates.

Table 9-4. Vehicle Consumption Rates in GPH

Vehicle	Idle	Cross-Country	Road
M1	17.3	56.6	44.6
M2/3	1.4	18.0	8.6
M113	1.0	10.5	8.9
M88	2.0	42.0	31.0
M9 ACE	1.4	12.6	9.3
M109A6	2.2	16.0	11.8
MLRS	1.3	15.0	8.6

This process is used for each vehicle type within a unit. It provides an accurate estimate of Class III (B) consumption that helps identify and mitigate shortfalls to ensure operational success. As with other classes of supply, adjust amounts based on historical data and actual consumption. For aviation planning purposes, see Table 9-5.

Table 9-5. Aviation Planning Factors

Aircraft	AH-64A	AH-64D	CH-47D	UH-60L
Maximum Speed in Knots	170	150	170	193
Cruising Speed in Knots	120	120	120	120
Endurance in Hours	2.3	2.3	2.5	2.5
Range in Miles/ Kilometers	260/430	260/430	345/575	300/500
Passenger Seats	NA	NA	33	11
Litter Evacuation	NA	NA	24	6
Ambulatory Evacuation	NA	NA	31	7

To compute the estimated aviation fuel requirements, calculate the same way as with ground equipment. The number of aircraft multiplied by air hours.

Packaged Class III

Class III (P) forecasting requires coordination with supporting maintenance elements. There is currently no single source manual of Class III (P) requirements by vehicle type. To adequately forecast Class III (P) requirements, units must refer to the equipment's applicable technical manual (TM) and historical data. Poor planning for packaged lubricants can have detrimental effects. Most units deploy with 15-30 days of packaged lubricants on-hand as part of their stockage listing. Environmental considerations such as dust, snow, and rain affect the consumption rate of Class III (P). Sustainers must also analyze transportation trends regarding how long items take to arrive at the SSA, so timely replenishment occurs.

CLASS IV: CONSTRUCTION MATERIAL

To adequately capture the nuances of effective Class IV operations throughout large scale combat operations (LSCO), units must strive to accurately plan, resource, construct, and develop a distribution plan, all nested within the planned obstacle engagements for the brigade. Effective Class IV operations begin with collaborative planning between the brigade engineer cell and maneuver and brigade engineer battalion executive officers/S-3s. Class IV planning is conducted in support of all phases of the operation. The amount of required Class IV is dependent on the desired mobility, countermobility, and survivability of the various operations of the unit. The principal staff officer responsible for developing the initial concept obstacles is the assistant brigade engineer (ABE), who typically communicates the initial Class IV requirements in terms of preconfigured packages, such as combat configured loads (CCLs).

Logistics planners must coordinate closely with the ABE to understand Class IV requirements at the BCT level, monitor the requisition of these items that are not typically stocked within the unit SSA, and monitor the consumption of these items as the operation progresses. It is critical to note that while the ABE will typically plan and communicate these requirements in terms of CCLs, each CCL will consist of items with various national stock numbers (NSNs), nomenclatures, quantities, and units of issue. A detailed description of each pre-configured Class IV module is typically found in the division operations order Annex G (Engineering), Appendix 3 (General Engineering), Tab C (Engineer Specific Combat Configured Loads).

The ABE is also responsible for determining how many modules are resourced for each battalion and where, in the BCT's area of operations, the CCLs should initially be placed. The bulk materiel for CCLs will not arrive in the requested configuration, and will require additional manpower to meet the needs of the BCT. Configuring CCLs can be accomplished by using a brigade-tasked detail, supervised by the brigade engineer battalion or by the supporting echelon above brigade units. The BSB support operations officer coordinates transportation of CCLs to supported units based on the BCT engineer planner's tasking. Each CCL should be delivered to the supporting FSC no later than 48-hours before the start of the operation to give maneuver units enough time to establish and improve their positions.

CLASS V: AMMUNITION

Ammunition is forecasted through the Total Ammunition Management Information System (TAMIS), operated by the brigade ammunition office (BAO). Weapon density, number of personnel, and specific mission requirements determine the requirements. Unit basic load (UBL) varies with each operation. Note that there is no "one size fits all" UBL for an entire operation. Each combat phase may require unique ammunition. For example, high-explosive grenades are necessary for

an attack, and Family of Scatterable Mines are needed for a defense. Controlled supply rates are a significant planning consideration and should be located in the brigade operations order, Annex F, Paragraph 4, Section 3 (Supply).

Once UBLs are determined by the BAO, BCT master gunner, and BCT S-4, they are validated through TAMIS and received from the ammunition supply point in mission configured loads, which must be reconfigured into combat loads for each subordinate unit. Ammunition planners reference the Conventional Ammunition Packaging and Unit Load Data Index to determine transportation requirements by analyzing the compatibility, weight, and cube dimensions of each set of ammunition. This determines how many CCLs are built for each subordinate unit. The planning factor for UBLs is three basic loads for a brigade-sized element: one with the weapon system (company level), one with the combat trains command post (battalion level), and one stored at the ammunition transfer holding point (ATHP) (brigade level). This enables ammunition operations as a phase progresses. Sustainers need to account for basic loads, and should be able to transport all combat loads with organic assets.[1]

The final forecasting consideration is how to replenish ammunition after the first two basic loads. Unit replenishment from the ATHP is accomplished through expenditure reports. While the exact process is determined by unit standard operating procedures (SOPs), expenditure reports are the only method to bring a unit's UBL back to 100 percent after each engagement. Companies should incorporate an expenditure reporting process through their platoon sergeants to ensure accurate replenishment can occur. Battalion S-4s ensure that each logistics status captures what has been expended. The expenditure report is sent to provide the BAO time to request additional ammunition before subordinate units turn in their requests. The expenditure report itself is not an ammunition request. Unit S-4s are still responsible for requesting replenishment using Department of the Army (DA) Form 581, *Request for Issue and Turn-In of Ammunition*, 01 June 2021.

CLASS VIII: MEDICAL MATERIAL

Medical elements typically deploy with three days of Class VIII supply to support their battalion. When forecasting Class VIII requirements for medical operations, consider the mission, location, projected casualty rates, and available medical assets. Determine multiple courses of action and methods of execution to ensure accessibility of supplies and frequency of their delivery. Additionally, understand projected battle casualty rates, as that is crucial for forecasting unit requirements. Other considerations, such as disease and accidents, should also be included in estimates.

CLASS IX: REPAIR PARTS AND COMPONENTS

Class IX is extremely difficult to forecast during an operation because of the unknowns involved with equipment wear and tear. Planners work in coordination with the SSA and maintenance support elements to predict what and how much Class IX is needed for an operation. The time of year and operational environment factors into Class IX requirements. For example, winter requires additional batteries and mountainous terrain requires additional tires. Units deploy with the common authorized stockage list that contains common-use items for the unit. Coordinate with the SSA to determine what transportation assets are needed to transport Class IX to subordinate units.

TRANSPORTATION

Transportation requirements are interconnected to every class of supply. Transportation capabilities and requirements must be properly planned to support units. Too little, and multiple trips are needed to distribute supplies. Too much increases Class III and IX supplies, and results in a backhaul of large quantities of supply, wasted man-hours, and the commitment of unneeded logistic assets.

Transportation is forecasted based on two things: the analysis of how many pallets are needed per class of supply and the determination of the time needed to deliver supplies to subordinate units. For planning purposes, see pallet and time factors per major transportation asset in Table 9-6.

Table 9-6. Pallet and Time Factors per Major Transportation Asset

Asset	Warehouse Pallets	436Ls Pallets	Minutes Up/ Download	Max Persons	Max Litter	Max Ambulatory
20’ Container	16		10			
40’ Container	32		10			
M872 Trailer	18		10	30		
M871 Trailer	12	4	8	50		
Supply Van	12	3	8			
463L Pallet	4					
PLS Flatrack	10	2	2			
LMTV	6		4	16		
MTV	8		6	18		
HEMTT	8		6			
Bus						
UH-60/HH-60 Black-hawk					6	1
CH-47 Chinook	12	3			8	19
UH-72 Lakota					2	8
CH-46 Sea Knight					6	15
CH-53 Sea Stallion					8	19
V-22 Osprey					12	24
Sherpa	4				24	30
C-130 Hercules		6			50	27
C-141 Starlifter		13			48	38
C-5 Galaxy		36				70
C-17 Globe-master		18		54	36	102
C-21					1	3

Proper transportation forecasting relies on understanding how many assets will fit on a vehicle. For classes of supply, warehouse pallets are the common transportation planning factor because all physical equipment is bound to pallets and the end state for most requirements is the number of pallets needed for transportation. For personnel transportation, passenger seats and available litter

and ambulatory spots are needed. Supplies bound on pallets can sometimes be double-stacked, effectively doubling the available space. Planners should be cautious when doubling loose items, as the top stack will lose integrity in tough terrain.

Transportation time-distance factors are important to forecast, as they allow synchronization of efforts at echelon by dictating movement times and total time on the road. Convoy times can be determined by dividing the distance traveled by the speed limit (distance/speed = time). Leaders must take into account "on-station" time, which is the time needed to upload and download equipment. This analysis will help leaders plan the total time a convoy needs, and help subordinate units synchronize their efforts for maneuver units.

Fighter management is the final planning factor for transportation assets. The distribution company and FSC distribution platoon are responsible for managing transportation assets and ensuring vehicles and personnel are readily available for convoy operations. Units that place all of their assets into operation at one time assume increased risk and prevent allocation of resources for emergencies that arise. If missions allow, units should strive to place one third of their equipment and personnel in a stand-down status at any time to conduct maintenance, administrative, and rest operations.

CONCLUSION

Accurately forecasting logistics requirements is a crucial, yet often overlooked sustainment planning process. Relying on the default push of supplies results in wasted man hours, increased risk to Soldiers, and unneeded commitment of logistic assets. Knowledge of forecasting and mission analysis conducted at each phase of the operation will provide units with the ability to provide commanders a logistics estimate that will sustain the force through any operation. Defining unit capabilities, shortfalls, and mitigations through detailed analysis and forecasting will ultimately shape the sustainment battlefield and expand the combat commander's operational reach, freedom of action, and operational endurance.

> "A firm doctrinal grasp enables sustainment staffs to use and apply the planning tools of the operations process."
>
> Army Doctrine Publication (ADP) 4-0, *Sustainment*, 31 July 2019.

Endnote

1. Army Regulation (AR) 710-2, *Supply Policy below the National Level,* 28 March 2008.

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CHAPTER 10

Producing and Publishing an Executable Concept of Support: Paragraph 4 and Annex F of the Mission Order

COL Brent Coryell and CPT Ryan Breaux

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019 with updates by MAJ Adam Phearsdorf)

OBSERVATION

In the large scale combat operations (LSCO) operational environment, brigade combat team (BCT) sustainment planners have difficulty developing a clear anticipatory support plan and translating that plan into a coherent written Paragraph 4 and Annex F. There is often a blurred line between support operations (SPO) section and brigade staff responsibilities when producing these products. The brigade staff, especially the BCT S-4, and the SPO officer are often not synchronized in the orders production process, and this causes confusion during sustainment planning and execution. Personality can also influence whether the BCT S-4 or the SPO officer leads this effort. Frequently, one or the other does the preponderance of the work, and they rarely work on it together. The BCT SPO officer executes the concept of support, and therefore has an obligation to be involved in the planning. If a BCT S-4 writes the support plans without SPO involvement and concurrence, the unit often suffers from ineffective mission execution.

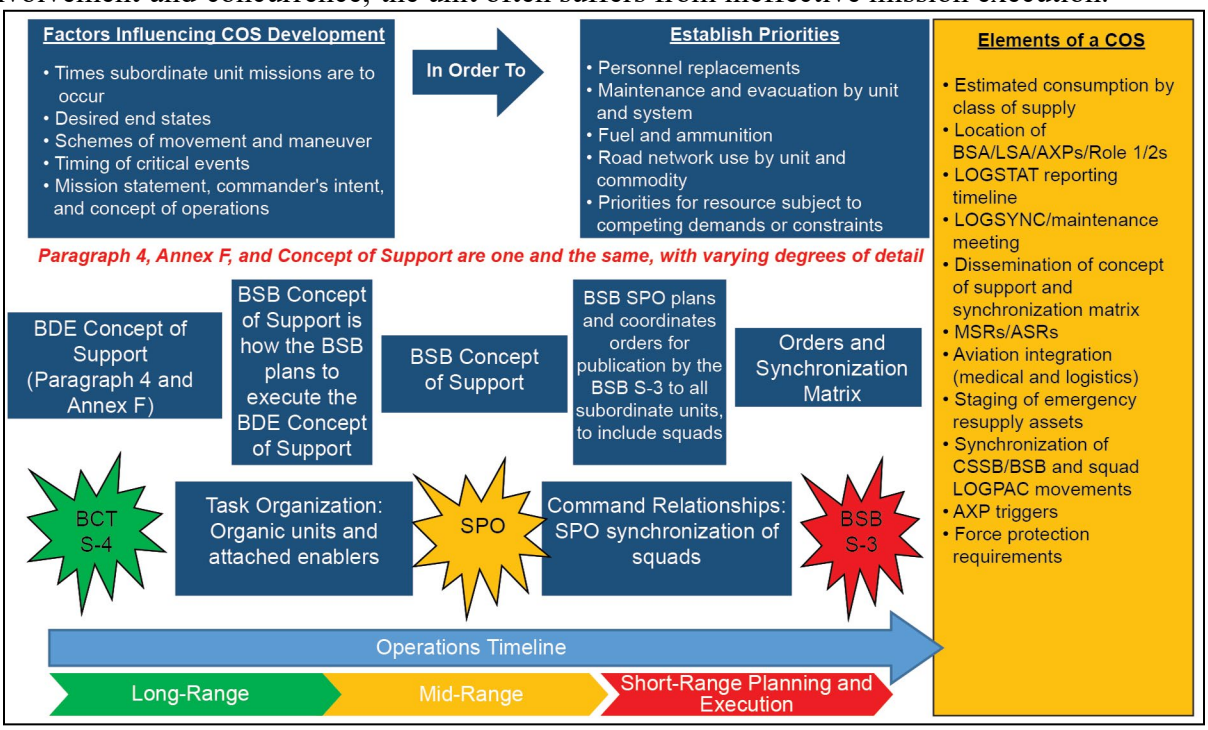

Figure 10-1. Creation and Elements of the Concept of Support[1]

DISCUSSION

The brigade staff's sustainment planners and SPO section work together on Paragraph 4 and Annex F, which are synonymous with the concept of support. They are one in the same and not separate and distinct products.

The military decision-making process ends when the mission analysis and logistics estimate results are translated into a written mission order. Paragraph 4 of the order is dedicated to the sustainment warfighting function. Annex F is typically a synchronization matrix, dedicated to sustainment operations, and where the specific details of who, what, when, where, and how can be found. If these details are not addressed, and Paragraph 4 and Annex F are a copy/paste action from the last order and lack the detail required to gain understanding of the current mission, supported units lose confidence. According to Field Manual 6-0, *Commander and Staff Organization and Operations,* 05 May 2014, Annex F should follow the five-paragraph attachment format. The BCT S-4 and SPO officer must be actively involved in making the sustainment plan, and that responsibility should be understood. Often Annex F is developed through experience by working together, and is directed by the BCT executive officer or S-3 and influenced by the brigade support battalion (BSB) commander.

Desynchronization starts when the brigade sustainment planners and the SPO section plan in a vacuum before operations even begin. The BCT S-4 should coordinate logistics operations and plans, with special emphasis on long-range planning, and provide staff oversight to subordinate units in the areas of supply, maintenance, transportation, and field services. The S-4 staff should then integrate themselves between the brigade staff, the SPO section, and the BSB commander, and execute sustainment operations for the BCT. The BCT S-4 does not have a multi-functional staff, and has a limited number of sustainment planners. This makes it critical that the BCT S-4 collaborate with the SPO section when writing Paragraph 4 and Annex F of the BCT operation order (OPORD). The BCT S-4's most important duty is developing the BCT sustainment plan, which is executed by the BSB SPO officer. The BCT S-1 and BCT surgeon both assist with developing this plan. The BCT S-1 shapes the personnel portion of Annex F by addressing personnel replacement operations and planning casualty estimates. The BCT surgeon is responsible for preparing the health service support portion of Annex F.[2] However, this responsibility is usually handed off to the brigade's medical operations officer, a captain commonly referred to as the brigade medical officer (MEDO). The medical concept of support can be included in Appendix 3 (Health Service Support) of Annex F.

The BSB SPO officer is not part of the BCT staff. However, the SPO officer does serve as the principal staff officer responsible for synchronizing BSB sustainment operations for all units assigned or attached to the BCT. The SPO officer applies sustainment capabilities against BCT requirements, conducts short- and mid-range planning of hours and days, and executes the BCT S-4's sustainment. A proactive SPO officer travels to the brigade's main command post as often as time allows to engage the staff personally. The SPO officer also interfaces between supported units and the sustainment brigade and coordinates support requirements with the sustainment brigade SPO section.

RECOMMENDATION

Annex F of the BCT OPORD defines how sustainment operations should support the concept of operations outlined in the base plan or order, otherwise known as the concept of support.[3] It is imperative that the brigade staff's sustainment planners and the SPO officer collaborate during

BCT sustainment planning. The BCT's sustainment cell coordinates logistics, personnel services, and health service support.[4] The logistics officer, or BCT S-4, is responsible for leading this cell. The SPO office should produce the concept of support, supported by Paragraph 4 and Annex F, depicting the execution plan for supporting the BCT's operations. These orders should include a synchronization matrix that outlines the plan for execution and enables the BCT S-4 and all subordinate BSB units to maintain awareness of the BCT support plan. SPO includes the logistics synchronization matrix and the overlay at Tab A (sustainment overlay) to Appendix 1 (logistics) to Annex F, as prescribed in Field Manual 6-0. Therefore, units should not substitute the logistics synchronization matrix as Annex F in its entirety. The BCT S-1 should provide personnel service unit locations to this matrix, and the BCT surgeon/MEDO should provide hospital and medical treatment facility locations. The BCT S-1 should also provide more details, such as casualty estimates, in Appendix 2 (Personnel Services Support) to Annex F. The BCT surgeon/MEDO should provide extra details, such as the medical concept of support, in Appendix 3 (Health Service Support) to Annex F.

Units that have clearly delineated roles between the BCT S-4 and SPO section are more successful. To be effective, Paragraph 4 must cover priorities for resources, the locations of logistics support areas, brigade support areas (BSA), ambulance exchange points, Role 1 and Role 2 zones, main supply routes, and alternate supply routes. Annex F must cover who is getting what (commodities), when (time window), where (BSA, forward logistics element, logistic release point), and how (resupply distribution method). A detailed Annex F prepares units for conducting an effective sustainment rehearsal. Confirmation briefs and back briefs ensure the order is understood. Good products allow commanders to begin the next stage: rehearsals.

Endnotes

1. ATP 4-90, *Brigade Support Battalion,* 18 June 2020.

2. Field Manual 6-0, *Commander and Staff Organization and Operations*, 05 May 2014.

3. Ibid.

4. Ibid.

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CHAPTER 11

Producing an Accurate and Functional Logistics Common Operational Picture

COL Brent Coryell

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019)

The logistics common operational picture (LOGCOP) provides a near real-time picture of logistics, human resources, and medical information. It links the battalion to the brigade combat team (BCT) and the BCT to the sustainment brigade and theater planners (see Figure 11-1).

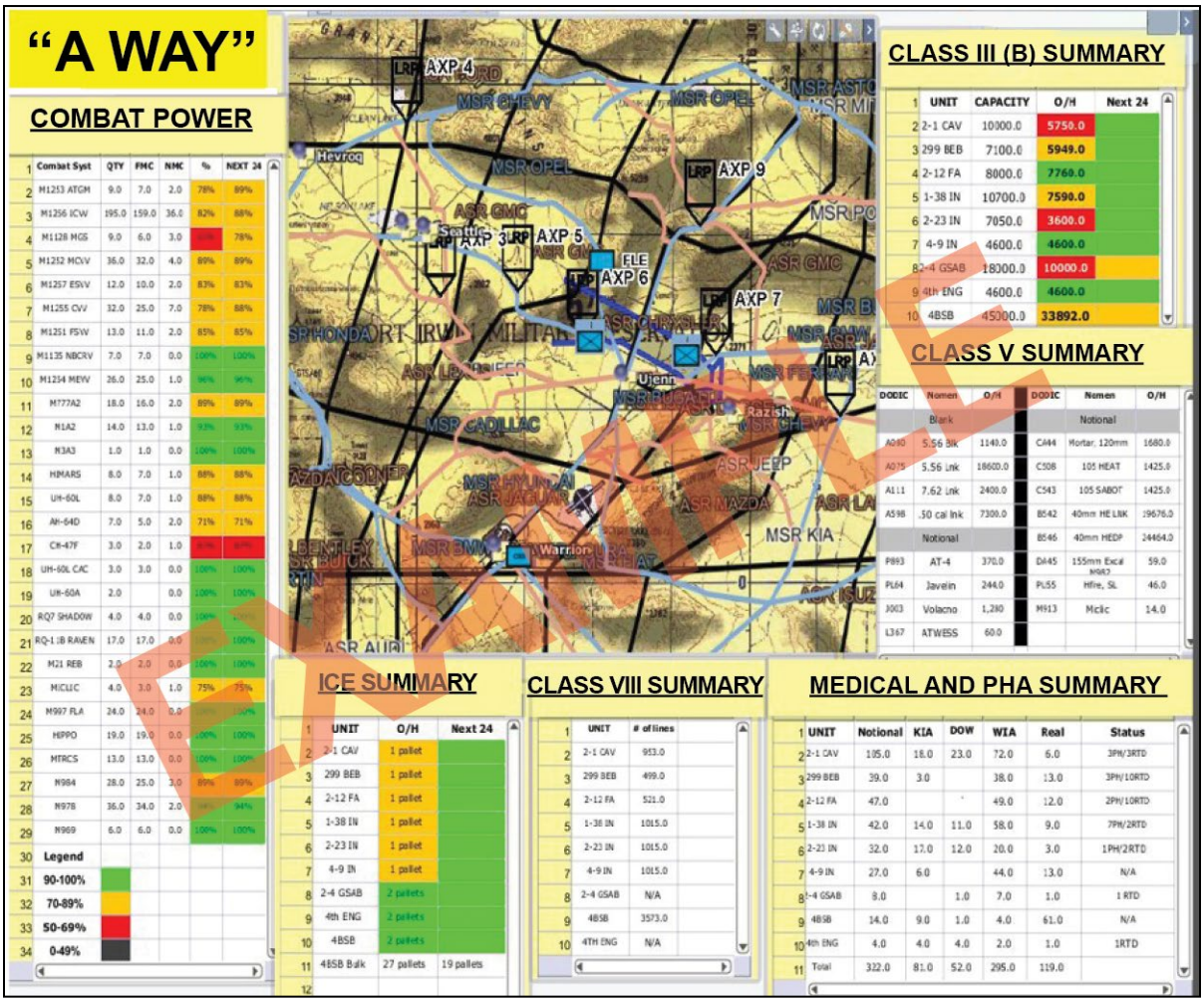

Figure 11-1. Example LOGCOP

Potential Elements of a LOGCOP

- Supply commodity status by:
  - Unit
  - Class of supply (current on hand)
  - Class of supply (next 24/48/72-hours)
- Sustainment locations
- Combat trains command posts, field trains command posts, Role 1 and 2, and ambulance exchange points
- Main supply routes and alternate supply route routes, and their status
- Headcounts
- Significant activities relating to sustainment
- Sustainment synchronization matrix
- Combat power slants and 026 (equipment status report)
- Logistics asset availability and capacity
- Logistics Information System and Army Battle Command System statuses
- Logistics commander's critical information requirements
- Logistics battle rhythm
- Personnel in personnel holding area that need regeneration
- Class VII that needs regeneration

OBSERVATION

There are often numerous, differing LOGCOPs posted, negating the word "common." LOGCOPs are often missing critical data, or are not updated frequently enough with current actionable data from the logistics status report. This means it is difficult to use LOGCOPS to determine the sustainability and supportability of current or planned operations. Also, "green," "amber," "red," and "black" codes do not have commonly understood definitions, such as percentages, tied to them. This can lead planners to overreact when a status turns "red," as they do not understand that systems must go "red," and lower their stock to facilitate loading the total amount of inbound re-supply.

DISCUSSION

The LOGCOP is used throughout the BCT, and higher levels of command, to provide a logistics snapshot of current on-hand quantities and predict future requirements. Decision-makers need a near-real time picture of logistics, human resources, and medical information that links the BCT to the sustainment brigade and theater planners. Decision-makers must maintain visibility of current and projected requirements, be able to synchronize movement and materiel management, and maintain integrated visibility of transportation and supplies. Visibility enables responsive sustainment management, which is achieved through situational awareness (using a LOGCOP),

total asset visibility, personnel tracking, and effective monitoring of distribution operations. The ability to monitor, measure, and manage end-to-end sustainment activities is necessary to reduce the degree of friction inherent in a logistics pipeline.

The LOGCOP enables higher command and support units to make timely decisions and prioritize, cross level, and synchronize the distribution of supplies to sustain units.

The BCT S-4 is responsible for monitoring logistics statuses across the BCT, but observations from combat training centers show that often the support operations (SPO) section is building and managing the LOGCOP. Units arrive without knowing who is responsible for creating and maintaining the LOGCOP. This leads to the SPO section and the BCT S-4 either creating their own LOGCOPs, removing the 'common' out of common operational picture, or neither creating a LOGCOP, thinking the other is handling it. The unit must determine who owns the LOGCOP, and train that way.

RECOMMENDATION

Develop and maintain a LOGCOP that allows maneuver and logistics commanders to view the same data in near-real time, enabling unity of command and effort. The LOGCOP should allow BCT leaders to see themselves so they can make informed and timely decisions. The brigade support battalion (BSB) commander, in coordination with the BCT executive officer/S-4, needs to determine who owns the LOGCOP and the processes for developing and maintaining it. There should only be one LOGCOP for the BCT, and it should be posted for all units' situational understanding. Successful units develop a LOGCOP that provides the BSB and BCT commander with a single snapshot of the current sustainment status. This snapshot must include three things. First, the major classes of supply (i.e., Classes I, III [B], and V), and medical status broken down by battalion. Second, a BCT combat power slant, to provide a clear idea of what combat power the BCT commander has available. And finally, a graphic representation of all of the logistics nodes. In other words, combat trains command posts, logistic release points, ambulance exchange points, Role 1/2, forward logistics elements, brigade support areas, main supply routes/alternate supply routes, etc., should all be created for a shared understanding. In the past, successful units have also created battalion efforts, so they could be turned on and off as required. Ensure that the terms and depictions of "green," "amber," "red," and "black" are understood and tied to actual percentages.

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CHAPTER 12

Produce and Submit an Accurate and Timely Logistics Status Report

COL Brent Coryell

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019, with updates by MAJ Adam Phearsdorf.)

The brigade combat team (BCT) must develop and use a logistics status (LOGSTAT) report that identifies logistics requirements, provides visibility on critical shortages, projects mission capability, and provides input to the logistics common operational picture. Figure 12-1 shows the proper LOGSTAT reporting.

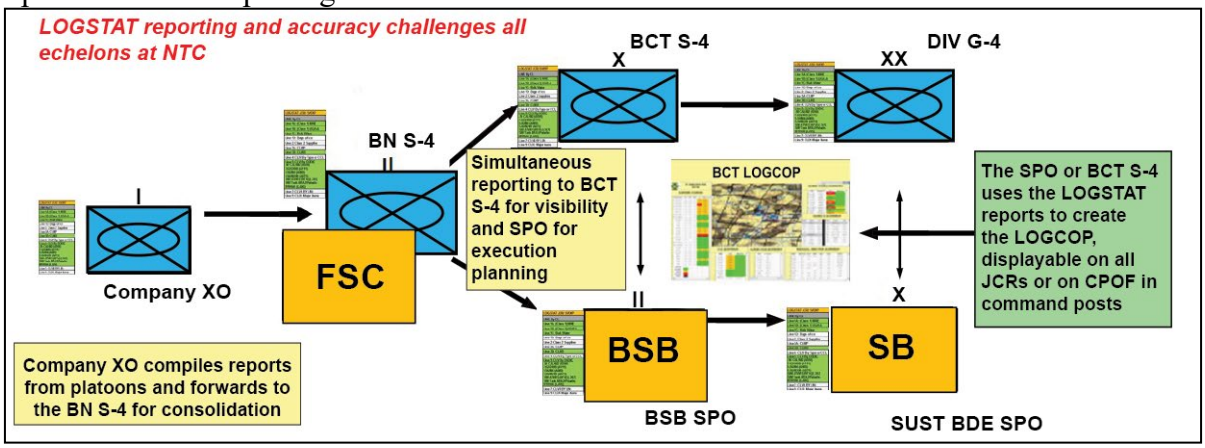

Figure 12-1. Accurate LOGSTAT Reporting

OBSERVATION

The BCT executive officer (XO) must enforce disciplined LOGSTAT reporting, to avoid emergency re-supply. The keys to a successful LOGSTAT are enforced, accurate, and on time submissions.

Logistic status reporting is a challenge for all echelons. Reporting is not occurring with regular frequency, and thus preventing anticipatory sustainment planning and execution. The BCT average LOGSTAT turn-in rate at the National Training Center (NTC) is 76 percent, and often the submitted LOGSTATs are inaccurate. This affects shared understanding and the actions or decisions that need to be made. Inaccurate LOGSTATs often result in un-forecast or emergency resupply operations, or the backhaul of unneeded supplies. At the NTC, BCTs average 30 un-forecast resupply missions during a 14-day rotation, usually caused by improper forecasting on the LOGSTAT report.

DISCUSSION

LOGSTATs are essentially customer feedback forms that are used to drive the entire sustainment process. Because of LOGSTAT inaccuracy, the battalion S-4 often becomes the primary source of logistics desynchronization at echelon. LOGSTATs are often inaccurate because units do not

know how to accurately forecast and produce a logistics estimate from the on-hand quantities reported by company XOs. Company XOs must accurately report current on-hand supply statuses and battalion S-4s should roll those up as a forecast in the LOGSTAT report. Successful BCTs have clear and concise LOGSTAT reporting procedures from all subordinate units, including all enablers.

RECOMMENDATION

A great LOGSTAT is detailed, easily transmittable through multiple means, understood by all, and rehearsed. A LOGSTAT that captures every Department of Defense Identification Code (DODIC) issued to the brigade is too in-depth, while a LOGSTAT that simply states a series of pro-words for all classes of supply limits the ability for the sustainment community to accurately forecast resupply. LOGSTATs must be simple enough for a scout platoon sergeant to collect data in an established screen, yet detailed enough for sustainment planners to refine their running estimates, identify short comings, and potentially re-allocate critical sustainment assets. The LOGSTAT reporting plan should be simple and understood by all, with an executable method for reporting at echelon. An example of a LOGSTAT reporting plan to the brigade S-4 is as follows: primary, Joint Capabilities Release (JCR); alternate, Command Post of the Future (CPOF); contingency, Secret Internet Protocol Router Network (SIPRNET) email; and emergency, frequency modulation (FM) radio or runner. Publish the LOGSTAT primary, alternate, contingency, and emergency (PACE) plan in the mission order and practice it during everyday operations, including routine garrison operations. The XOs in companies, battalions, and brigades must enforce the process, and ensure reports are timely and accurate. Delineate who receives, processes, and distributes the LOGSTAT information for the BCT.

> "The LOGSTAT report is an internal status report that identifies logistics requirements, provides visibility on critical shortages, allows commanders and staff to forecast future support requirements, project mission capability, and informs the common operational picture. This report provides planners at the battalion and brigade levels with the information necessary to forecast future support requirements and coordinate appropriate resupply to the maneuver forces."
>
> Field Manual 4-0, *Sustainment Operations*, 31 July 2019

LOGSTAT reports are best when they are preformatted. Units that lack a LOGSTAT template in their standard operating procedure (SOP) generally experience inconsistent LOGSTAT formatting, which makes compiling commodity data burdensome and ineffective. Allow space for free text at the end of the formatted report for any discussion or requests that do not fit into the preformat. LOGSTAT reports should list current on-hand quantities. Once this general information is received, it should be used to confirm staff running estimates and inform when resupply is required. An effective LOGSTAT should gain information from running estimates as it moves through the respective staff, to reflect that echelon's planning horizons. Figure 12-2 is an example LOGSTAT report.

		On Hand	Request/NMC
Unit/PAX Count		Line 1	
Location		Line 2	
(8 Digit Grid/Graphic Control Measure)			
Class I		Line 3	
A	MRE Cases		
B	Water (Gallons)		
Class III (3)		Line 4	
A	JPB G/A/R/B		
B	DF-2		
C	AV Gas		
D	Full Fuel Cans		
Class III (P)		Line 5	
A	15W40 Engine Oil		
B	Coolant (GAL) Radiator Fluid		
C	Gear Oil 80/90W		
D	Transmission Fluid		
E	Other		
Class IV		Line 6	
A	C-Wire		
B	Metal Stakes		
C	Sandbags		
D	4X4, 2X4, Plywood		
E	Nails		
H	Screws		
I	Wooden Chock Block		
J	Wooden Lateral		

		On Hand	Request/NMC
Class V		Line 7	
A	9mm		
B	5.56 loose		
C	5.56 link		
D	7.62 link		
E	.50 CAL		
H	40 mm link		
I	40 mm loose		
J	AT-4		
K	Javelin		
L	120 mm HE		
M	120 mm Smoke		
N	120mm ILLUM		
O	120mm IR		
P	120mm WP		
Q	Smoke Grenade		
R	FRAG Grenade		
S	Flash Grenade		
T	ILLUM Flare		
U	60mm		
V	M3 Carl Gustav		
W	Stinger		
X	Claymore		
AC	TOW		
Class VIII		Line 8	
Class IX		`Line 9	
Other		Line 10	

Figure 12-2. Example LOGSTAT Report

The LOGSTAT report should be sent from the battalion S-4 to the BCT S-4 and support operations (SPO) officer simultaneously. However, delineate who receives, processes, validates, and distributes the LOGSTAT information, between the BCT S-4 and the SPO officer. Allow the BCT S-4 to gain situational awareness and shared understanding, then collect and consolidate the LOGSTAT reports and send them to the division G-4. This enables the SPO officer to have near real-time data, analyze this data for resupply planning, and coordinate with echelons above brigade units. The SPO officer or BCT S-4 should use unit LOGSTAT reports to create the logistics common operational picture, which is displayable on all JCRs or CPOFs. Once commodity re-supply amounts are validated in the logistics synchronization (LOGSYNC) meeting, the LOGSTAT report should be used to update the LOGSYNC matrix. The LOGSYNC matrix can then become the source document that drives resupply operations, validates the LOGSTAT, and drives distribution execution.

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CHAPTER 13

Conducting an Effective Logistics Synchronization Meeting

COL William "Joe" Parker, III and MAJ Adam Phearsdorf

INTRODUCTION

In a brigade, one of the key battle rhythm events is the logistics synchronization (LOGSYNC) meeting. The basic structure and discussion points for this meeting are similar in execution between garrison and field environments. However, the manner in which the meeting is conducted, and the outputs that are required, differ based on the operational requirements, tempo, and communications architecture. This chapter will predominately focus on the best practices for executing a field environment LOGSYNC meeting, to best support large scale combat operations (LSCO).

First and foremost, units need to determine the LOGSYNC meeting's purpose and desired outputs. They must determine who owns the meeting, who is expected to participate, and what decisions are being made or driven. These answers will vary depending on the unit and mission. The following represent best practices observed at the National Training Center.

LOGISTICS SYNCHRONIZATION MEETING PURPOSE

The purpose of the LOGSYNC meeting is to validate logistics status (LOGSTATs) reports, synchronize distribution requirements, and identify any critical shortfalls or emerging requirements for the brigade. Given time constraints, it should not be a working meeting. All requirements should be consolidated at the field trains command posts (FTCPs) before the meeting, and the final analysis should be presented to validate the LOGSYNC matrix. Inevitably, there will be changes based on the operational picture. However, these should be identified and accounted for with the support operations (SPO) team before the meeting. The LOGSYNC matrix builds shared understanding to effectively communicate the ongoing sustainment operations across the brigade. The LOGSYNC matrix also paints a picture for the brigade commander and staff regarding sustainment considerations in ongoing planning.

LOGISTICS SYNCHRONIZATION MEETING PARTICIPATION

Participants are critical to the success of any meeting, and the participants of the LOGSYNC meeting must come armed and capable of making decisions for their organization. Many units mandate that the brigade executive officer, brigade S-4, battalion executive officers, battalion S-4s, and support company commanders must participate. While all of these participants play a critical role in the sustainment architecture of the brigade, realistically only a few will be able to participate in person. This highlights the importance of two critical components of the meeting: the primary, alternate, contingency, and emergency (PACE) plan and the importance of properly manning and equipping the FTCPs. These two components determine the success of the meeting and the successful dissemination of the information captured in it. The meeting itself is typically run by the SPO officer on behalf of the brigade support battalion (BSB) commander, and co-chaired by either the brigade executive officer or S-4.

LOGISTICS SYNCHRONIZATION PRIMARY, ALTERNATE, CONTINGENCY, AND EMERGENCY PLAN

The PACE plan for each unit will vary based on the expertise of the assigned personnel and the available equipment, but generally the following served well as the LOGSYNC PACE plan for units during National Training Center rotations: P, in-person; A, very small aperture terminal (VSAT) phone (conference); C, VSAT phone (point to point); E, None. Failing to account for a PACE plan could force the BSB to plan sustainment operations without critical input from the maneuver units. Historical data suggests that LOGSTATs are generally incomplete and fail to fully account for emerging requirements, and when submitted, fail to paint a complete picture of that unit's requirements. A functional PACE plan that supports the execution of the LOGSYNC meeting enables the validation of submitted requirements and significantly increases the accuracy and timeliness of sustainment operations. Using the Joint Battle Command-Platform (JBC-P)/Joint Capabilities Release (JCR)-Log, either with point-to-point messages or the chatroom function, is an often underutilized and overlooked capability. The chatroom function, while not the easiest to use without rehearsals and standardization, allows for maximum participation, shared understanding, and is available down to the lowest echelon. In lieu of a face-to-face, this capability offers the best chance at validating and rapidly disseminating up-to-date information. Whichever method is chosen, it is critical to rehearse and codify it in battalion and brigade tactical standard operating procedures.

LOGISTICS SYNCHRONIZATION MEETING OUTPUTS

The most critical output of the LOGSYNC meeting is the LOGSYNC matrix. The LOGSYNC matrix drives sustainment operations across the brigade, and provides the data necessary to initiate follow-on planning at echelon. The BSB S-3 should take the LOGSYNC matrix to their BSB operations synchronization meeting and use it to develop tasks, warning orders, and operations orders for the BSB. In conjunction with the SPO, the BSB S-3 should communicate the LOGSYNC matrix to the BCT S-3 for publication at the brigade level. Brigade planners (both in the S-3 and S-4) should understand ongoing sustainment operations and validate that the LOGSYNC matrix supports ongoing maneuver operations. If the meeting is conducted correctly, potential decision points will become apparent and can immediately be addressed or given to the brigade commander for decision. For more on the LOGSYNC matrix, please see Chapter 14.

CONCLUSION

An effective LOGSYNC meeting is a deliberate event with active participation. Required decisions are made in a timely manner, and are based on required inputs (via the LOGSTATs) or representatives from the maneuver battalions capable of making decisions for their organizations. Once concluded, any identified decision points are provided, and the LOGSYNC matrix is widely disseminated, which synchronizes sustainment operations with maneuver operations. This is a critical battle rhythm event, and is necessary to ensure the brigade combat team is adequately supported in time and space during the harsh conditions that LSCO will provide.

CHAPTER 14

Produce and Publish an Executable Logistics Synchronization Matrix

MAJ Adam Phearsdorf, MAJ Jerod Farkas, and LTC James Hubbard

INTRODUCTION

Army Techniques Publication (ATP) 4-90, *Brigade Support Battalion*, 18 June 2020, briefly describes the logistics synchronization (LOGSYNC) matrix, but gives little guidance on what it should look like or be used for. This chapter attempts to provide the Army with 'a way' to produce, publish, and execute a LOGSYNC matrix that adds value to both the supported and supporting organizations.

A good LOGSYNC matrix should serve as a current operations synchronization tool, an execution battle tracking product, and a future operations planning tool.

> "The {brigade support battalion} BSB S-3 includes the synchronization matrix as a tab to Annex C, Operations, of the BSB operation order. The BSB {support operations} SPO section uses the logistic status reports and running estimates to update the synchronization matrix for future operations."[1]

Units often attempt to use a single document to fit both planning and execution. Although it is always recommended to gain efficiencies whenever and wherever possible by utilizing the same tools, products, staff personnel, or architecture, this is a situation where the future planning LOGSYNC matrix is too detailed to publish across a brigade combat team (BCT) or utilize as an execution tool. In other words, if the SPO section's LOGSYNC matrix was published across the BCT, the executors would suffer from information overload, confusion would ensue, and it would be ignored. Therefore, two LOGSYNC matrixes should exist: the SPO section's planning matrix and the S-3's execution matrix.

THE SUPPORT OPERATIONS OFFICER'S PLANNING LOGISTICS SYNCHRONIZATION MATRIX

The LOGSYNC planning matrix is the most important document a sustainer has to plan and support an operation. This matrix needs to remain a living document with detailed running estimates, planning factors, and all the math showing how the SPO officer arrived at their final answer. The SPO officer must include enough depth of information to drive sustainment operations without a detailed order. While the SPO section and BSB should not consider the planning matrix to be "close-hold," there is no reason why the S-3 should publish this matrix. The SPO office can distribute this matrix as the BSB commander sees fit to sustainment planners, staff, echelons above brigade supporting organizations, etc. (see Figure 14-1 for an example of a detailed planning LOGSYNC matrix).

H-Hour	June								
	Monday		Transportation Asset Utilization						
	12 June 22								
	0001-1200	1201-0000	PLS/LHS/Trailer Platforms			HEMMT (2.5k) Fueler/MFS TRM Platforms		
2BCT	Reconnaissance to PL Paul; Attack to seize OBJ SATURN and OBJ PLUTO (2 up [2-14 and 4-31] and 1 back [2-87]); 2-87 prepare for FPOL		OH	FMC	REQ	OH	FMC	REQ
			138	125	121	48	40	40
1-89 CAV	Conducting zone reconnaissance to PL PAUL		15	14	10	6	5	5
Class I Water	2k gal on hand (1 HIPPO)	2k gal on hand (1 HIPPO)			1			
Class I Rations	2 SQD DOS (3,750 meals; 7 pallets) on hand	2 SQD DOS (3,750 meals; 7 pallets) on hand			1			
Class III	1.5k gal on hand	1.5k gal on hand Receive 10k gal resupply (bulk-to-bulk transfer) by BSB-to-FSC LRP 1700 12 JUN 22						5
Class V	2 small arms CCL (1 rack) on hand 1 mortars CCL (1 rack) on hand 1 heavy CCL (2 racks) on hand	2 mortars CCL (1 rack) and 2 heavy CCL (3 racks) resupply (flat rack exchange) by BSB-to-FSC LRP 1700 12 JUN 22			8			
Transport		FSC move to LRP to receive resupply NLT 1700 12 JUN 22						
Maintenance	SQD UMCP remains at CTCP location							
Medical	SQD Aid Station split into MAS and FAS MAS at SQD Main CP FAS at AXP 5							
2-14 IN	LD to seize OJB SATURN at 0500 12 JUN 22	Actions on OBJ SATURN	12	11	10	6	5	5
Class I Water	500 gal on hand Receive 2k gal resupply (HIPPO exchange) by BSB-to-FSC LRP 0300 12 JUN 22	2.5k on hand (HIPPO + internal assets)			1			
Class I Rations	0 BN DOS on hand Receive 2 BN DOS (3,558 meals; 7 pallets) resupply (1 flatrack exchange) by BSB-to-FSC LRP 0300 12 JUN 22	2 BN DOS (3,558 meals; 7 pallets) on hand			1			
Class III	1.5k gal on hand	1.5k gal on hand Receive 10k gal resupply (bulk-to-bulk transfer) by BSB-to-FSC LRP 1700 12 JUN 22						5
Class V	4 small arms CCL (1 rack) on hand 3 mortars CCL (2 racks) on hand 3 heavy CCL (4 racks) on hand	4 small arms CCL (1 rack) on hand 3 mortars CCL (2 racks) on hand 3 heavy CCL (4 racks) on hand			7			
Transport	FSC move to LRP to receive resupply NLT 0300 12 JUN 22	FSC move to LRP to receive resupply NLT 1700 12 JUN 22						
Maintenance	*SQD UMCP remains at CTCP location							
Medical	BAS remains at BN Main CP AXP 3 active 6k gal DECON H2O moving to AXP 2 ICW BSB-to-FSC LRP at 0300 12 JUN 22							
4-31 IN	LD to seize OJB PLUTO at 0500 12 JUN 22	Actions on OBJ PLUTO	12	10	10	6	6	6

Figure 14-1. Planning LOGSYNC Matrix Example

THE S-3'S EXECUTION LOGISTICS SYNCHRONIZATION MATRIX

The BCT S-3 must publish a LOGSYNC matrix for shared understanding across the brigade concerning who is getting supported with what, how, when, and where. Without this shared understanding, the BCT's support battalions (field artillery, brigade engineer, and brigade support) might not know what they have at their disposal to accomplish their missions. Also, maneuver battalions will not understand what is coming their way and what kind of operational endurance and operational reach they should be anticipating. A LOGSYNC matrix should be seen as a "fighting product."

The SPO section's planning matrix is not the right fit for this fighting product. An execution LOGSYNC matrix is a trimmed down version of the planning matrix. It does not show the SPO section's running estimates or planning factors, nor all the math necessary to show the thought process and rationale. The execution matrix only needs the final answer across time and space: what supplies are going where, for whom, when, and via what distribution medium (supply point, unit distribution, logistics release point, throughput, aerial, etc.). Ideally, the execution LOGSYNC matrix should cover the next 24-hours, with projections through the next 48- to 72-hours (see Figure 14-2 for an example of an execution LOGSYNC matrix).

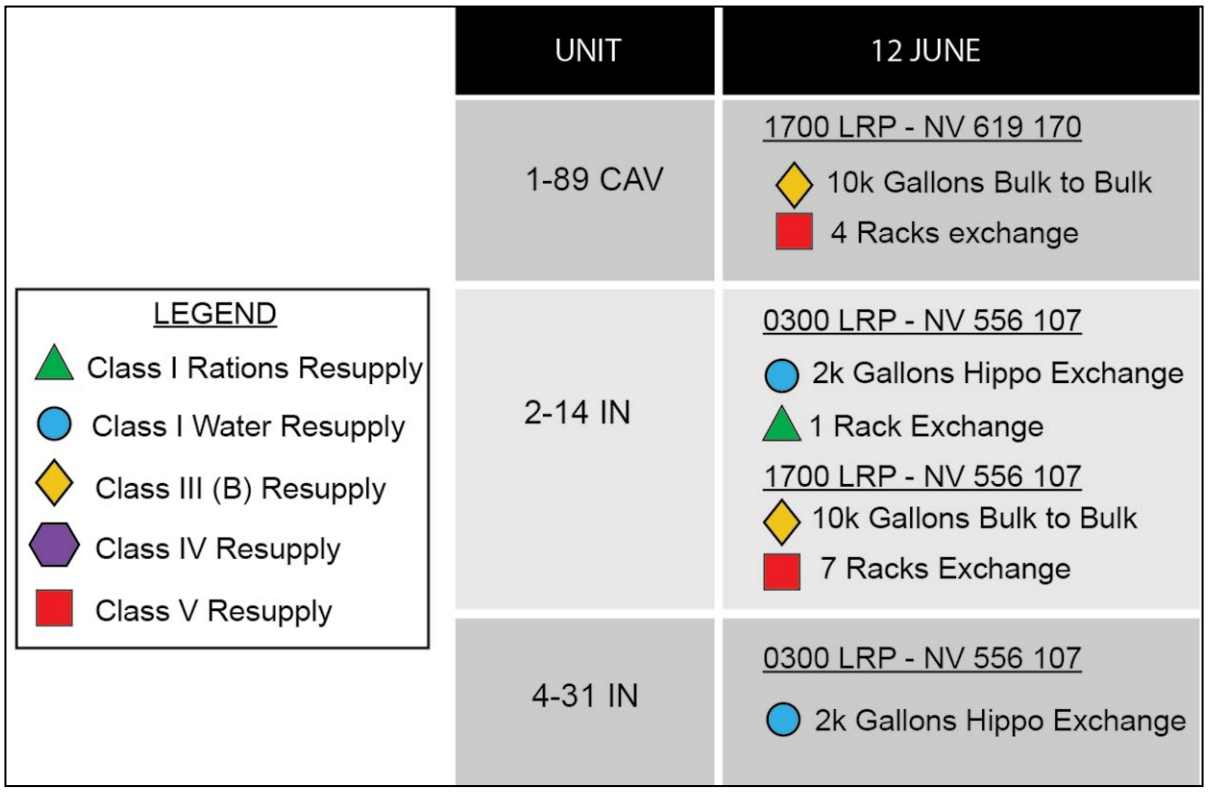

Figure 14-2. Execution LOGSYNC Matrix Example

LOGISTICS SYNCHRONIZATION MATRIX PRIMARY, ALTERNATE, CONTINGENCY, AND EMERGENCY PLAN

The BCT S-3 should publish this fighting product execution matrix every day at the widest distribution level. Even if the BSB S-3 owns and develops this execution matrix, when it is published through the BCT S-3, it becomes a tasking to all subordinate organizations. It ceases to be a concept or idea of how to do it, and becomes the concept of what will happen.

Each supported unit should receive a copy. Brigades must transmit the matrix, but with the tempo of operations during large scale combat operations (LSCO), this is easier said than done. Leaders must ask themselves the following questions:

- What is the tactical primary, alternate, contingency, and emergency (PACE) plan?
- Does the tactical PACE plan work for the transmission of support products like the execution LOGSYNC matrix?

- Is it a priority for brigades and/or battalions to establish and utilize the upper tactical infrastructure and communicate via email?
- Can the execution LOGSYNC matrix be published via the Joint Battle Command-Platform?
- Based on gound conditions, is it reasonable to expect subordinate commands to send runners to receive the execution matrix?
- How can the field trains command post (FTCP) help?
- Are the FTCPs collocated in the brigade support area?
- How are FTCPs communicating with their supported battalions?

CONCLUSION

For the LOGSYNC matrix to find success in LSCO, BCTs must view it as a critical document that is vital to tactical success, on par with the operations order and branch/sequel plans. Operations sections at both the battalion and brigade-levels should integrate the LOGSYNC matrix into the greater current operations battle tracking process and the future operations planning process. Commanders, staffs, and leaders at all echelons and across all warfighting functions should never consider the LOGSYNC matrix something exclusive to the sustainment community.

One key recommendation is to produce two LOGSYNC matrices: a detailed planning matrix for future operations and a succinct execution matrix for current operations. However, any method for producing a LOGSYNC matrix will fail if the BCT S-3 does not publish it as a fighting product, and if there is no sustainment PACE plan to ensure it gets out across the organization.

LSCO will present BCTs with a unique set of problems that few in today's Army have experienced. The pace of LSCO will, in many cases, prevent the slow and deliberate planning process that results in lengthy, detailed operations orders with all annexes and graphics attached. The sustainment community within a warfighting organization must provide operators with an execution LOGSYNC matrix that is concise, easy to understand, and tells them everything they need to know. That execution matrix is best backed up by a living planning matrix to support the future operations. The failure to uphold these two separate matrices could result in maneuver elements not understanding their operational reach and endurance and potential culmination on the objective.

Endnote

1. ATP 4-90, *Brigade Support Battalion*, 18 June 2020.

CHAPTER 15

The Sustainment Rehearsal

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The brigade sustainment rehearsal is the event where key sustainment actions are practiced, shared understanding is developed, and logistics and medical plan synchronization is validated. A good sustainment rehearsal demonstrates that the sustainment plan is synchronized with tactical operations. This means that the logistics tenets (anticipation, integration, continuity, responsiveness, and improvisation) are reflected on the battlefield. Field Manual 3-96, *Brigade Combat Team,* 19 January 2021, states that the brigade combat team sustainment rehearsal should ensure the synchronization of sustainment efforts before, during, and after combat operations. It also validates 'the who, what, when, where, and how' of support. The sustainment rehearsal usually occurs after the combined arms and forward support company (FSC) rehearsals, and should not last more than 90 minutes. Sustainment rehearsals are often turned into war games, working groups, or logistics synchronization meetings. The sustainment rehearsal is where key sustainment actions are rehearsed. It allows participants to translate the tactical plan into visual impressions that leave a mental picture of the key sustainment action sequence. The brigade S-4 and the support operations (SPO) officer must collaborate within their sections to ensure the rehearsal is organized and roles and responsibilities are clearly defined. This chapter provides a look at what current Army doctrine says about the sustainment rehearsal and some of the best practices that have been observed from the field.

SETTING THE STAGE

Like the combined arms rehearsal (CAR), sustainment rehearsals require the participation of brigade leadership and subordinate unit leadership. Each individual that attends the rehearsal should have a speaking role, and should strive to replicate their real-life actions.

Terrain models provide a visual understanding of the operation. The most successful rehearsals are the ones where the speakers are on the terrain model in their accurate locations and discussing their actions in relation to the tactical operation. The terrain model is not simply a podium. Participants should move to the correct locations so that the execution can be visualized, seeing the terrain and adjacent units.

SPEAKING ROLES: WHO SHOULD DO WHAT?

The Brigade Executive Officer

As the officer responsible for sychronizing brigade staff and logistics, the brigade executive officer (XO) leads the rehearsal, with assistance from the brigade support battalion (BSB) commander and the SPO officer. The XO should begin by conducting roll call and discussing the rules of conduct for the rehearsal. The rehearsal can be conducted by task force (TF), phase, event, or some other framework, depending on the focus and available time. However, the most successful rehearsals are typically conducted by phase, and focus on specific triggers or critical events on the brigade's execution checklist.

Opening Remarks

Opening remarks are typically given by the brigade commander and BSB commander. These commanders cover their intent, key tasks, and desired end state. They also provide their priorities

for support and priority of maintenance before transitioning to the next speaker. It is important to remember that in cases where the sustainment rehearsal is conducted immediately following the CAR, the audience has just recently heard the commander's intent, key tasks, and desired end state. It may be important to focus this discussion on sustainment tasks, and how they support the tactical tasks from the CAR.

The Brigade S-3

The brigade S-3, or a captain from the brigade S-3 shop, then provides an orientation on the terrain model, including key terrain, objectives, phase lines, and routes, and the task organization and concept of operation for the phases that will be rehearsed.

The Brigade S-2

The brigade S-2 then briefs enemy composition, disposition, and most likely/most dangerous courses of action. Again, it is important to focus the assessment of enemy actions on how they will affect the sustainment forces. The status of supply routes, weather, and light data are also important to the sustainment rehearsal.

Throughout the sustainment rehearsal, the brigade S-2 should focus and engage in the discussion. The S-2's understanding of the enemy's most likely/most dangerous courses of action enables the meeting participants to look for the friendly actions that the enemy would also be looking for. Injecting relevant enemy actions ensures that the sustainment plan is flexible enough to maintain sustainment actions so they do not cause the maneuver to lose momentum.

Vignettes: "A Way"

The most successful brigade XOs prepare the formation to react to events that could cause significant disruption to the execution of the plan. At the end of each rehearsal phase, the brigade XO should present a series of vignettes or critical events to ensure the formation is prepared to react to events that could cause significant disruption to the execution plan. A best practice is to select two or three vignettes before the rehearsal and then notify the battalion XOs of the challenge that will be presented to them during the execution of the rehearsal. This allows them to develop the branch plan, solve the tactical problem beforehand, make any necessary coordination, and ensure that the rehearsal does not get bogged down trying to solve a new problem in a large group setting. Some suggested vignettes are: mass casualty during a breach, recovery of cavalry equipment, unscheduled Class V resupply for the fires battalion, emergency air mission request to be executed by aviation, and chemical, biological, radiological, and nuclear (CBRN) contamination of a unit. This is not an all-inclusive list, but a starting point to check battalion understanding of how critical tasks should be dealt with.

The Brigade S-4

The brigade logistics staff officer (S-4) develops the sustainment plan, and coordinates with the rest of the staff and the sustainment enterprise as a whole.[1] This allows shared understanding at echelon, and builds relationships across warfighting functions. Successful brigade S-4s detail the priority of support within the brigade for the following functions: movement, supplies, ration cycle, and maintenance by combat platforms. It is important to highlight any task organization changes and validate the support relationship within the brigade, including enablers. Also, they should discuss the system and process for logistics status (LOGSTAT) submission, including the point of contact, time suspense, and the primary, alternate, contingency, and emergency (PACE) plan, according to the standard operating procedures.

The brigade S-4 should discuss the battle loss reconstitution process and include actions at echelon. For example, they should review how equipment is recovered from the point of battle loss and the procedures maintenance managers take to prepare the necessary paperwork for the S-4 and property book officer.

At this point in the rehearsal, participants should have a good understanding of the area of operations, key terrain, routes, and enemy actions specific to sustainment operations. If the terrain model overview and descriptions of the enemy's most likely/most dangerous courses of action did not address sustainment specific concerns, then sustainment leaders should extrapolate their concerns from a maneuver perspective, just like they already do during the CAR. Enemy scenarios can be incorporated into the vignettes, or they can focus on sustainment operations. At the completion of each vignette, each battalion and the BSB element should have an understanding of how these challenging events will be handled. The vignettes serve as branch or contingency plans that can be executed with minimal planning. If the vignette cannot be resolved during the rehearsal, then the SPO team can mark the vignette to solve through the military decision-making process (MDMP) at a later time.

At this point, the audience should walk away understanding the scheme of maneuver, what is being supported, the enemy implications on the sustainment plan, the priorities of support through each phase, and the submission process for LOGSTATs on each platform in the logistics PACE plan.

The Support Operations Officer

The role of the BSB is to plan, coordinate, synchronize, and execute replenishment operations in support of brigade operations.[2] The BSB distributes multi-class logistics support, and provides food service, Roles 1 and 2 Army health service support, and field maintenance and recovery. The BSBs maintain visibility of the distribution network within their area of operations, synchronizing the flow of throughput into the brigade's operational area.

The SPO officer is the staff officer responsible for synchronizing BSB distribution operations for all assigned or attached brigade units. The SPO officer is also responsible for applying BSB capabilities against brigade requirements. The brigade S-4 is the logistics planner for the brigade, focusing on long range planning, but the SPO officer executes the plan, interfaces between supported units, and coordinates with the sustainment brigade.

The SPO officer covers the brigade support area (BSA), forward logistics element (FLE), field trains command post, combat trains command post, and any logistics resupply point locations. The SPO officer captures their composition, disposition, reporting requirements, and the sustainment PACE plan by phase. The sustainment PACE plan should be different from the brigade PACE plan, because sustainment units are authorized different systems. However, it should include all of the systems that the sustainment enterprise has access to.

Successful SPO officers routinely submit their distribution synchronization matrix to the brigade S-3 for publication as a fighting product, operationalizing sustainment at echelon. The SPO officer also briefs the distribution method in detail: who is getting what, when, where, and how.

Every battalion has unique requirements that are driven by their doctrinal tactical tasks. These requirements affect how they need to receive replenishment and their support should be tailored with those conditions in mind. For example, a cavalry squadron is not able to receive or consume hot chow while screening, and their lines of communications are extended throughout the brigade's area of operations. This presents a dilemma for sustainment support and merits a deep dive.

Support Operations Supply and Services

The supply and services officer in charge covers the ration cycle; field feeding plan; Class III (B) and petroleum, oils, and lubricants distribution plan; Class IV distribution plan; the BSB's capacity for these commodities; anticipated consumption rates; and expected shortfalls. The supply and services officer should discuss how many battalions they can replenish before requiring a resupply and translate that into days of supply based on their anticipated consumption rates. The Class IV distribution plan should be created in conjunction with the brigade engineer or a representative from the brigade engineer battalion. They are responsible for developing the obstacle plan, and should also design the Class IV combat configured loads and designate the engineer supply points.

Support Operations Transportation

The SPO transportation officer should provide an overview of the BSB's available haul capacity, the transportation movement request process, and any approved transportation movement requests that are in effect for the operation, including approved augmentation to the FSCs. The SPO transportation officer should also discuss the priority of forward and rearward movement by unit, class of supply, and the necessary movement control requirements to approve logistics packages (LOGPACs) moving back to the BSA. This is important for the control of congestion on the main supply routes, for force protection of those convoys, and for providing visibility to supply point pickups. Note that replacements that need to move forward from the personnel holding area represent an often unanticipated but significant transportation requirement. Their movement needs to be synchronized with LOGPACs. Therefore, the brigade S-1 should coordinate with the transportation officer through the transportation movement request process.

Support Operations Ammunition

The brigade ammunition officer describes the ammunition request process, the controlled supply rates for the operation, and the on-hand stock at the ammunition transfer holding point, including special munitions. The brigade ammunition officer should highlight any perceived shortfalls, based on the amount of requested ammunition, and remind the meeting attendees of the expenditure report requirement. Expenditure reports must be received for the BSB to clear those requisitions with the supporting ammunition supply point. The brigade master gunner is responsible for developing the required supply rate that the brigade ammunition officer uses to determine if there is a shortfall of munitions. The required supply rate is a product of the wargaming process, and is based on the S-2's enemy estimate, the weapon systems designed to attrite that enemy, and the tactical tasks planned for each unit.

Support Operations Maintenance

The SPO maintenance officer briefs the current and projected combat power for the operation, the Class VII regeneration plan, and the controlled exchange and recovery procedures. The maintenance officer should specify the timelines or conditions for recovery and the areas of responsibility between the B-Company BSB and FSC recovery areas. The key to maintaining maximum combat power is proactively managing non-mission capable fleets by tracking their position on the battlefield via an analog and digital non-mission capable common operational picture, aggressively coordinating recovery efforts, and mitigating supply shortfalls by directing controlled exchange.

Support Operations Sustainment Automation Support Management Office

The Sustainment Automation Support Management Office (SASMO) is responsible for maintaining the very small aperture terminal (VSAT) network and is required to support units on site throughout

the operation. The SASMO technician should brief their support request process, the battle drill for replacing a severely damaged VSAT, and how they will move forward to the supported unit's location. Although the SASMO is not part of the maintenance company, to avoid confusion their support should operate in the same way as the maintenance company specialty shops. The brigades with the most consistent VSAT connectivity use their SASMO to monitor their network in real time and proactively dispatch support.

Supply Support Activity

The supply support activity accountable officer provides an overview of their pickup and turn-in procedures, hours of operation, and the status of the common authorized stockage list, including any critical supply shortages that may affect the operation. This ensures that all participants leave the rehearsal with a common understanding of what supplies are available to support the brigade's readiness, and what they will need to cross-level.

Walking the Ground

During the SPO officer portion of the rehearsal, the audience is informed on where all the sustainment nodes are located within the brigade's area of operation, the brigade's estimates for each commodity, capacities highlighting shortfalls, and distribution methods. Each of these nodes and supply points are represented on the terrain model, with physical markers to foster visual understanding. Depending on availability, the SPO commodity managers should brief their portions while walking the terrain model. This engenders trust in the plan and bridges the audience with the responsible party. The SPO shop assigns a recorder to take notes on any identified changes or friction points that require additional planning or coordination.

The logistics synchronization matrix is the major planning product the SPO office uses as an input to the sustainment rehearsal and updates as an output. It is important that this product is easily disseminated when the brigade is dispersed. The classic horse blanket style synchronization matrix that requires a plotter to print is not sustainable in a field environment. What the brigade needs is an easy to read format that can be quickly copied by hand or sent in a standard paper format.

At this point of the meeting, the audience should have a clear understanding of how commodities will flow through the brigade's area of operations.

The Brigade Support Battalion Executive Officer

The BSB XO should focus only on the BSB actions. It is important that the sustainment rehearsal does not just restate everything discussed during the CAR. The BSB XO must ensure that the triggers to begin displacement of the BSA are nested with the brigade scheme of maneuver, so that all of the other elements understand what supplies, services, maintenance, and recovery support capabilities will be available at any given time throughout the operation. It is helpful to discuss the process for entering the BSA. Often, elements from FSCs or the combat/division sustainment support battalions (CSSBs/DSSBs) will not make frequency modulation (FM) or Joint Battle Command-Platform (JBC-P) contact with the BSA before their arrival. Digital or FM linkup dramatically deconflicts getting through the entry control point and reduces the time needed to execute LOGPAC operations.

A-Distribution Company

The distribution company commander describes what actions the BSB A-Company will take in each phase to accomplish the SPO officer's distribution plan. The most important things to note are the triggers and timelines for LOGPACs and supply point displacement, including the

fuel and water platoon, supply support activity, and the ammunition transfer holding point. The movement of LOGPACs out of the BSA and into the supported battalion's areas of operations must be synchronized. This ensures that the tactical situation will allow the FSC to receive the supplies they need and that the BSB can remain postured for replenishment. The displacement of A-Company's supply nodes can create periods of interrupted service that prevent the upload of LOGPACs and supply point pickups and the processing of supply requisitions, making the timing and sequence of their displacement critical. Before displacement, the BSB should confirm LOGPACs with the supported FSC and define what assets are providing their supply points with initial operational capability to prioritize their movement during BSA displacement.

The distribution company commander should also declare the disposition of their forces, if they have any attached to an FLE or FSC.

B-Maintenance Company

The BSB maintenance company commander briefs the execution of the area recovery plan, area maintenance support, and the disposition of their assets, if any are echeloned forward to an FLE or attached to an FSC. It is important to state the process for requesting and launching recovery assets and for leveraging the armament, ground support equipment, computer and electronics, and missile shops. The maintenance company's services and recovery section can enable the brigade with the recovery of non-mission capable vehicles as the brigade advances, and the specialty shops can push teams forward to conduct repairs or provide expertise to minimize disruption. Note that personnel moving forward to support an FSC should be pushed by BSB convoys. Requiring the FSCs to break contact from the battalion fight to pick up Soldiers from the BSA disrupts the distribution synchronization matrix by consuming the FSC's limited transportation assets, and makes it likely that the required support will not occur.

Sustainment Decision Points

Any changes to the plan that result from the sustainment rehearsal and affect the BSB commander's decision points should be annotated on the decision support matrix. Also, if there are any updates to the published order, the BSB should issue a fragmentary order to the base companies.

After the BSB XO and A- and B-Company commander briefs, everyone should have a clear understanding of how the BSB will provide support. This should include knowledge of the BSA location and triggers for displacement, triggers and timelines for LOGPAC operations to the FSCs, and any FLEs. Any changes to task organization or timing from the BSB should be discussed to ensure there are no seams in the transition of forces across the brigade. Also, everyone should understand the execution of recovery operations and movement of non-mission capable equipment.

Battalion/Squadron/Task Force Executive Officers

The battalion or TF XOs should discuss their formation's scheme of maneuver. This discussion does not need to go into great detail, as it should have been discussed in detail during the CAR. Each battalion or TF should emphasize different considerations based on their specific warfighting function.

Supported Battalion/Squadron/Task Force S-4s

The battalion S-4 focuses on defining their battalion's requirements by briefing their unit's anticipated supply status in the combat and company trains, their battalion's estimated consumption based on their logistics running estimate, and their number of qualified company-level evacuation and recovery teams. Typically a maneuver, fires, or effects captain, the S-4 should focus on using

their knowledge of the battalion's tactical tasks, special equipment, and tactics, techniques, and procedures to describe their requirements to their FSC commander and the SPO staff. This is important because although logisticians are experts in provisioning support for known requirements, they may struggle to anticipate the specific needs of a unit when they are new to the organization. The battalion S-4 and FSC commander need to work together during planning and execution so that both parties understand the battalion's requirements and the FSC's capabilities.

Forward Support Company Commanders

The FSC commander briefs their company's logistics situation and describes how they will satisfy the battalion S-4's requirements and adhere to the brigade's concept of support. The FSC commander should open this brief by stating their company's disposition between the field trains command post, combat trains command post, and maintenance collection point, and identifying any assets they plan to attach to the supported maneuver companies. Next, they should specify their capacity and define their estimated operational reach, in terms of distance and days of supply. This information ensures that the FSC commander and SPO officer have the same situational understanding, and confirms the SPO officer's running estimate for that battalion. Once the FSC's situation is defined, the commander should describe their planned support activities, including their distribution method and timing, when they will be postured to receive supplies for the BSB, and where they do or do not expect to perform recovery. The FSC commander should conclude their brief by defining their shortfalls and requesting the correlating support from the BSB. There are two important things that an FSC commander can achieve during the sustainment rehearsal. The first is ensuring that their shortfalls, and the risk associated with these shortfalls, are understood. The second is synchronizing the timing of LOGPACs to and from the FSC.

Supported Battalion/Squadron/Task Force Maintenance Technicians

The battalion maintenance technician should present the operational readiness rate for critical fleets of their supported battalions. They should also highlight their VSAT status and any serious challenges that could prevent them from returning key equipment to full mission-capable status before the operation commences. This information should clearly articulate the supported battalion's available combat power and illuminate any friction between the available fleet and the expectations outlined in the CAR. If the battalion maintenance technician does not brief this, then the battalion XO should.

Supported Battalion/Squadron/Task Force S-4 and Forward Support Company Commander Relationship

To provide their commander with extended operational reach and prolonged endurance, battalion S-4s, in conjunction with their FSC commanders, must complete their homework before arriving at the brigade sustainment rehearsal. As mentioned, the FSC commander provides their task, purpose, capabilities, and requirements. To accurately understand their requirements and any possible shortfalls, the S-4 and FSC commander must determine and manage their mission-based running. This enables them to provide the "so what" at the sustainment rehearsal. Units often brief their capabilities (what they bring to the fight) during the rehearsal, but they have not done their homework (or running estimates) so they cannot accurately depict the "so what" of their capabilities. For example, if a unit develops their running estimates, they should be able to brief, "Our battalion has X amount of fuel. We anticipate consuming X gallons during this phase. Therefore, we require X gallons, which we have coordinated to receive from the BSB at logistics release point (LRP) 1 at H+18 in vicinity of Whale Gap." This is an example of a TF/battalion that has anticipated a shortfall. However, it is also meaningful to brief if the TF/battalion anticipates a surplus of any commodities. This enables the SPO officer to redirect commodities from the unit

with surplus to any neighboring TF/battalion that is a higher priority of support, and improves responsiveness to the unit in need.

During the brigade's sustainment rehearsal, each TF/battalion should be provided with a copy of the brigade's concept of support and logistics synchronization matrix for the upcoming operation.

Once the TF/battalion has briefed their portion, the SPO/BSB staff should have an accurate understanding of the TF/battalion's requirements, their location, and the composition of their sustainment nodes, and can adjust the brigade's logistics synchronization matrix as necessary. Upon conclusion of the brigade sustainment rehearsal, each TF/battalion should walk away with a clear understanding of the commander's intent, the brigade's concept of support, and the brigade's synchronization matrix.

Brigade S-1

The brigade S-1 first briefs the total casualty estimate, broken down by killed in action, urgent, priority, and routine. They should also brief how many company-level evacuation and recovery teams are in the brigade, and their task and purpose during the operation. The S-1 then briefs the location of the personnel holding area, followed by the casualty reporting requirements and procedures. They should specifically focus on the flow of casualty packets and the casualty reconstitution process. Finally, the S-1 must brief when the daily personnel statuses (PERSTATs) and PERSTAT PACE plan are due.

Brigade Surgeon

The brigade surgeon briefs the medical concept of support, including the priority of support, priorities for air and ground medical evacuation (MEDEVAC) based on lines of communications and casualty estimates, and the evacuation PACE plan. They should brief the ambulance exchange point (AXP) scheme, including grid locations, triggers for opening and closing each AXP, and the air corridors that support AXP conversions to helicopter landing zones. The brigade surgeon briefs any direct support assets from the brigade support medical companies (BSMC) that are attached to maneuver units, highlighting the command relationship between the maneuver unit and BSMC commander. They should also include the plan for delegating medical mission approval authority for air MEDEVAC, if the brigade surgeon cell is unable to communicate. They should brief if the medical community has support from echelons above brigade. Finally, the brigade surgeon briefs the timeline, the method of publishing the medical common operational picture (MEDCOP), when medical situation reports are due, and the medical communications PACE plan. The current MEDCOP should be provided to all medical elements.

A brigade's medical concept of support is integral to overall combat success. Planning and synchronization is therefore vital to those outside the medical community. To facilitate shared understanding, the brigade's MEDCOP needs to be disseminated daily to all first sergeants and platoon sergeants. This enables a coordinated casualty evacuation (CASEVAC) plan and execution and enforces the doctrinal medical area support requirement. Likewise, planning and rehearsing as though every vehicle is a CASEVAC vehicle, while simultaneously allocating dedicated CASEVAC platforms to support battalion and brigade operations, enables a smooth CASEVAC architecture. Non-medical leadership enforcing these functions can significantly reduce died-of-wound rates.

Support Operations Medical Logistics Officer

The SPO medical logistics officer briefs the scheme of Class VIII resupply using the example of a line medic sending a resupply request to the Role 1, and then the Role 1 requesting Class VIII from

the brigade medical supply officer. The SPO medical logistics officer should provide all medical elements a copy of available push packs and/or the Class VIII request template. They should brief the brigade medical supply office's Class VIII request PACE plan, and the anticipated methods of Class VIII distribution. They must brief the priority of Class VIII resupply by unit and type, noting the availability of blood, plasma, or any other Class VIII that requires cold chain storage.

C-Medical Company Commander

The C-Medical commander briefs Role 2 locations and capabilities, especially if Role 2 locations/capabilities are less than fully capable. They should brief the triggers to jump, the anticipated down-times for jumping, and the plan for any Role 2 blackouts. They should also brief any additional details that may be needed for the AXPs, specifically: AXP frequencies, evacuation platoon call signs, and if they are manned, unmanned, or using a shuttle system.

Supported Battalion/Squadron/Task Force Medical Officers

Battalion medical officers (MEDOs) should brief all the locations that are pertinent to their operation, specifically the forward aid station and main aid station locations. They should use terrain features and checkpoints, along with the grid location, to create shared understanding. If a Role 1 jumps during this phase, a new location and what triggered the jump should be identified. They should brief alternate locations in the event the site is not accessible, is unsuitable, or enemy activity forces relocation. MEDOs brief each Role 1's capability, specifically: split operations, patient decontamination, litter load capacity, and the battalion CASEVAC assets and personnel. The battalion MEDOs also brief their casualty estimates, and if the casualty estimate indicates a mass casualty, they brief if the Role 1 has the capability to handle it or if external support will be required.

Supported Battalion/Squadron/Task Force Medical Officer, C-Medical Company Commander, and Brigade Surgeon Relationship

Finally, a battalion MEDO and the C-Medical commander should walkthrough receiving a casualty on the forward line of own troops, conducting CASEVAC operations to the Role 1, and then medically evacuating the casualty to the Role 2. This ensures shared understanding across the brigade.

To confirm the brigade medical plan is thoroughly synchronized, the brigade surgeon section should elaborate upon priorities of support, including priorities for air and ground MEDEVAC, based on lines of communication and casualty estimates. They should also brief applicable air corridors that support the conversion of AXPs to helicopter landing zones. Additionally, the TF/battalion MEDOs should brief their TF/battalion CASEVAC plan, including vehicle types and what down trace element is providing the platform and personnel.

During the brigade's sustainment rehearsal, each TF/battalion should be provided with a copy of the brigade's current MEDCOP and Class VIII push package configuration or order template.

Once the TF/battalion has briefed their portion, the brigade surgeon, MED SPO officer, and BSMC command team should have an accurate understanding of the TF/battalion's requirements, their location, and the composition of their medical nodes, and adjust the brigade's MEDCOP as necessary. Upon concluding the brigade sustainment rehearsal, each TF/battalion should walk away with a clear understanding of the commander's intent, the brigade's medical concept of support (including the locations and capabilities of adjacent medical elements), and a copy of the brigade's MEDCOP.

Support Operations Mortuary Affairs Noncommissioned Officer

Following the MEDEVAC plan, the SPO mortuary affairs noncommissioned officer in charge briefs the evacuation process for human remains, in accordance with Joint Publication (JP) 4-0, *Joint Logistics*, 4 February 2019, and Army Techniques Publication (ATP) 4-46, *Contingency Fatality Operations*, 17 December 2014. This brief should include guidance for handling, storing, and transporting remains, identifying the point at which casualties are declared deceased, and the location of the mortuary affairs collection point. This briefing should also include the task and purpose for search and recovery teams, if the brigade S-1 has not already covered it. Specify who will lead the teams in the search and recovery of remains.

The Supporting Combat/Division Sustainment Support Battalions

The CSSB is an echelon above brigade sustainment battalion that serves in a general support role to an entire division, and is task organized under a sustainment brigade. Therefore, it does not take taskings directly from the BSB or brigade. However, it is advantageous for the CSSB to remain situationally aware of BSB and brigade operations because they originate the CSSB's support missions. The best method for the CSSB to gain this situational awareness at the outset of an operation is to attend the brigade's sustainment rehearsal.

The CSSB can garner awareness by having a briefing role in the rehearsal. The CSSB's briefer can be the SPO officer or the battalion S-3. At a minimum, the brief should include the CSSB's current location (generally the division support area [DSA]), any projected DSA displacements, and the anticipated lines of communication that the CSSB can utilize to push sustainment to the BSA. Additionally, the CSSB can brief their capabilities, focusing on the specialty capabilities that the BSB and brigade would want to know they can request. For example, if a CSSB has a heavy equipment transport company, that is valuable information for an armored brigade combat team to understand. Finally, the CSSB can brief forecasted and tasked resupply missions to provide the BSB with anticipated CSSB LOGPAC arrival times, in the event that these arrival times conflict with BSB LOGPAC and LRP operations. The units can discuss potential friction points and mitigation techniques. If necessary, the CSSB can go back to the sustainment brigade with these friction points and mitigations for adjudication with conflicting sustainment brigade missions and priorities, and potential re-tasking.

During the CSSB portion of the rehearsal, the audience is informed on where the DSA is located within the brigade's area of operation and the DSSB's distribution, lift, and specialty capabilities, and how to request their use. Their current and projected locations should be represented on the terrain model with physical markers to foster visual understanding.

The major planning product the DSSB uses as an input for the sustainment rehearsal, and updates as an output, is the logistics synchronization matrix. It is important that this product is easily disseminated to the BSB, given the dispersion of the two units. As previously stated, any document that requires a plotter to print is not sustainable in a field environment.

At this point, the audience has a clear understanding of how commodities should flow into the brigade's area of operations.

CONCLUDING THE REHEARSAL

Units have myriad options when it comes to concluding a sustainment rehearsal. It is recommended that units take this opportunity to hear closing comments from the senior leader in attendance, which is hopefully the BCT commander. In the absence of the BCT commander or the BCT command sergeant major, the BSB commander should provide closing comments, ask if there are any clarifying questions that remain, and review any due-outs from the discussion that were generated during the rehearsal. The sustainment synchronization matrix will likely see updates or changes and will need to be distributed quickly after the conclusion of the rehearsal. Closing comments should focus on the accuracy and timeliness of LOGSTAT reporting, the importance of 5988-Es being turned in on time, and the importance of units submitting expenditure reports to accompany their ammunition resupply requests.

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CHAPTER 16

Displace and Occupy the Brigade Support Area

SFC Danny Lampkin and COL Brent Coryell

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019)

Displacing, setting up, and tearing down the brigade support area (BSA) is an enormous endeavor. The BSA must keep up with the brigade combat team (BCT) as it moves forward in a decisive action environment. To optimally support the BCT, it must remain stable for around 72-hours. Given these requirements, the BSA must be able to move and set up rapidly.

To master displacing and occupying the BSA takes practice and repetition. Effective BSA displacement preparation includes placing the right personnel on the right movement at the correct time and with the right equipment. Failure to do so can result in delays of support to the BCT and wasted man-hours, extended convoy operations, and increased risk for enemy attack. These risks can only be mitigated by deliberate planning and training of BSA layout, location selection, carefully selected convoy movement elements, and priorities of work.

DETERMINE THE TYPE OF BRIGADE SUPPORT AREA INTERNAL LAYOUT

The following are some tips for choosing a BSA location and layout:

- Conform to terrain features that leverage good fields of fire and observation.
- Use key terrain to make the BSA defendable.
- Provide cover and concealment.
- Make sure the BSA is not on a major enemy avenue of approach.
- Keep the BSA out of tube artillery range.
- Position forward support company (FSC) field trains command posts (CP) closer to A-Company supply points to mitigate BSA congestion.
- Position ammunition transfer holding points on the perimeter for standoff blast protection.
- Position the Role 2 and helicopter landing zone near the rear of the BSA, but not on the perimeter.
- Create one way road networks and traffic patterns that can support heavy vehicles.
- Create space to stage outgoing convoys.
- Centrally locate to support all BCT units.
- Keep near main supply routes (MSRs).
- Have an area large enough for vehicle dispersion.
- Ensure relatively flat ground for operations.
- Be sure the BSA will not flood during a hard rain.

Various configurations exist for BSA layouts. The most observed are the circle and triangle layouts. Brigade support battalions (BSBs) need to decide early in their train up which type of BSA layout they want to use and stick with it. The BSA will never be a perfect circle or triangle, as it must conform to terrain features that leverage good fields of fire and observation. Regardless of the BSA design, the BSA layout should be large enough to support all operations that are conducted in the BSA by organic and tenant units, FSCs, and the combat sustainment support battalion (CSSB). The BSA requires one way road networks and traffic patterns that will support heavy vehicles. There must be enough room to stage outgoing convoys. Perhaps most importantly, the BSA must be centrally located to support all BCT units and must be near the MSR. The most critical sector of the BSA is the A-Company layout.

Brigade Support Area Circle Layout

A successful technique to establish the BSA is the circle or clock method (Figure 16-1). Using this method, think of the BSA as a pizza. Every tenant or organic unit gets a slice or two. The entry control point (ECP) becomes the first point of reference. With this design, the main ECP is established at either the 6 o'clock or 12 o'clock position of the BSA. With the battalion CP representing the center of the clock, the perimeter of the BSA can then be divided according to relative combat strength of the tenant units. With these two reference points, a unit can easily determine their location. If the ECP is 6 o'clock, and A-Company BSB knows they occupy from 6 to 9 in the circle, they should then understand to just come in the ECP and turn left to occupy. They also know that 9 o'clock is relatively even with the CP in the center. This method also allows for easier tie-in to adjacent units. Another advantage of the clock method is that it provides a comprehensive traffic flow that allows sufficient space for incoming and outgoing convoys and staging. It also allows easy access to supply points and field maintenance support for incoming CSSB and FSC convoys. The BSB can establish a full 360-degree perimeter with sufficient fields of fire. However, the circle design requires more individual and vehicle fighting positions than the triangle method.

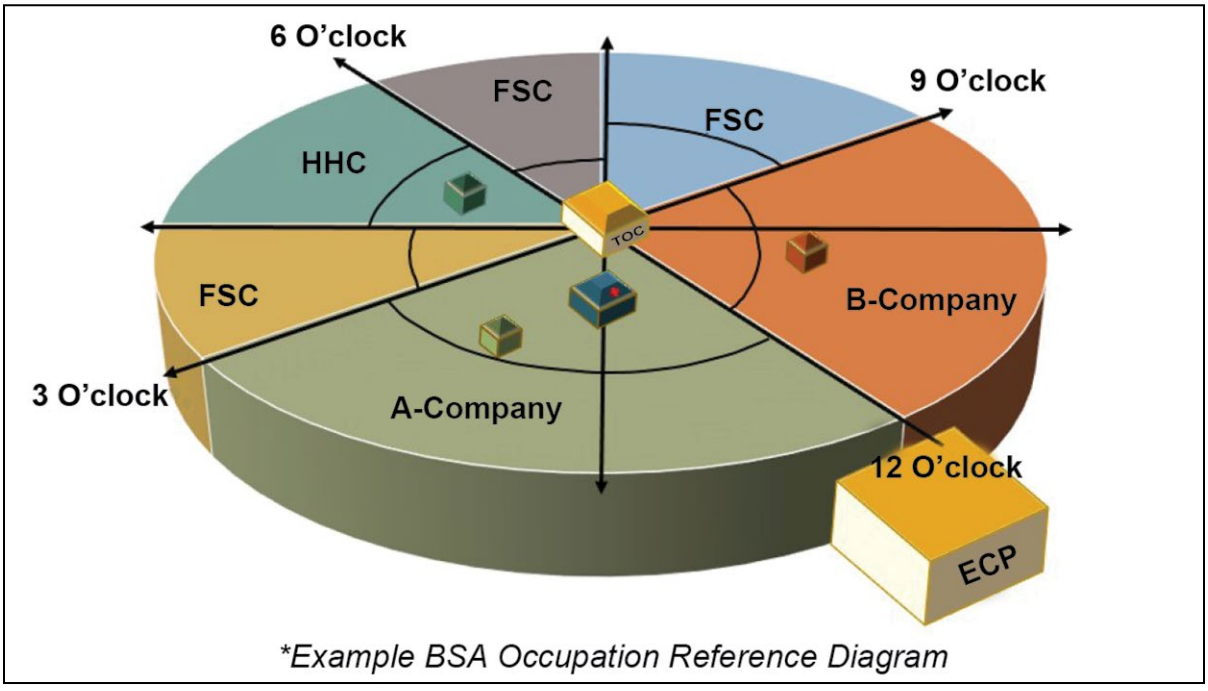

Figure 16-1. Example Occupation of a BSA using the Clock Method

Brigade Support Area Triangle Layout

Another BSA layout configuration, similar to a patrol base, is the triangle or apex method (Figure 16-2). A significant advantage of this method is the low requirement for mounted fighting positions. Only three vehicle fighting positions are deliberate in this method. These positions are stationary at three apices, or corners, which free up gun trucks for tactical convoy operations and quick response force missions. This method is more simplistic to setup than the clock method and can be ideal when quick displacement is a priority. However, disadvantages include implementing more individual hasty fighting positions, limited space for sustainment operations and convoy staging, and increased vulnerability for perimeter breach.

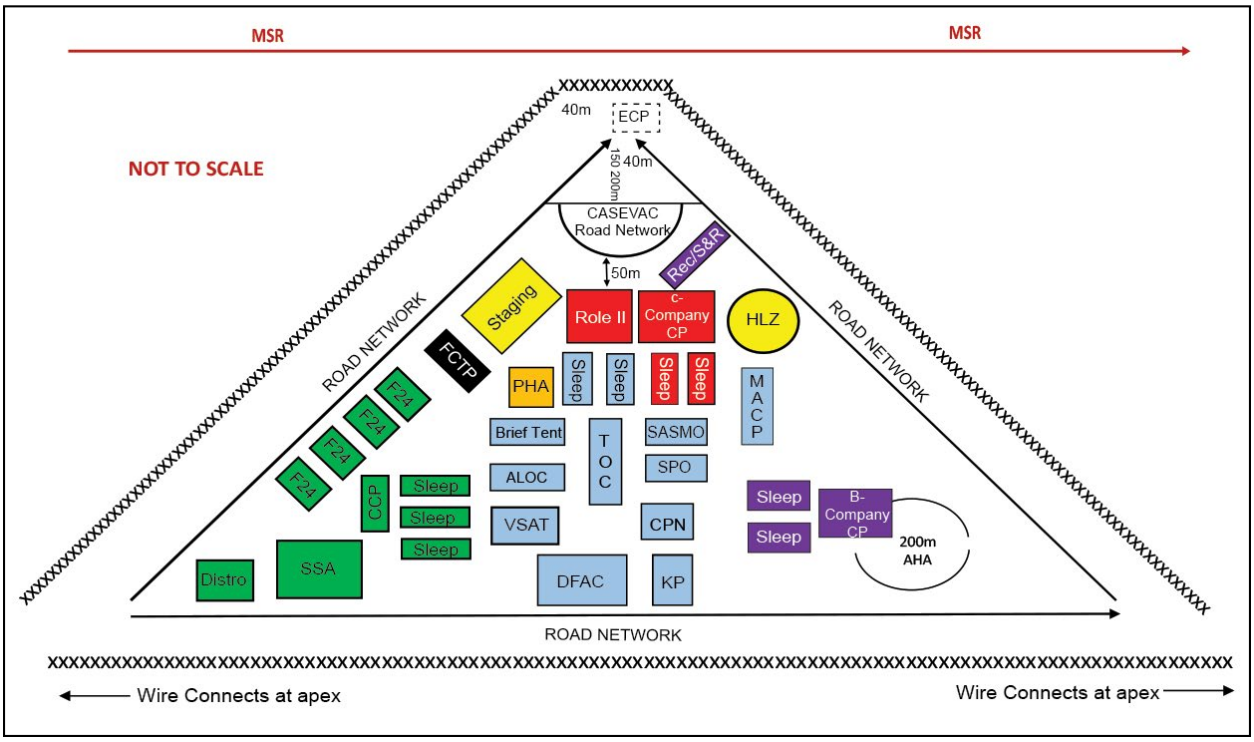

Figure 16-2. Example Triangle Layout

PLAN THE BRIGADE SUPPORT AREA LOCATION

The military decision-making process provides the commander with a deliberate process to develop, analyze, compare, and approve courses of action for BSA locations. The BSB staff, led by the BSB executive officer (XO) and S-3, should use the BCT mission order to conduct mission analysis and explore the full range of BSA locations that could best support the BCT. Choosing a location that allows units to defend against level I and II threats successfully is crucial to the occupation of the BSA. This is accomplished through developing a BSA defense common operational picture, quick response posture, and ECP operations. Choosing the right BSA location begins by conducting a thorough terrain analysis. The BSB S-2 assesses threats, hazards, capabilities, and vulnerabilities to assist in selecting an area that provides the best protection. BSBs should conduct ground reconnaissance during daylight hours before occupation, when possible. Whenever possible, using an unmanned aerial system can increase information collection. The BSA should be located near, but not on, an MSR. The BSA should not be more than 30 kilometers or less than 15 kilometers from the forward line of troops. A good technique for determining the BSA location is to see where the BCT CP and maneuver battalion combat trains command posts (CTCPs) are located.

The cavalry and combined arms battalion CTCPs should ideally be located around 10 kilometers forward of the BSA. The engineer and field artillery CTCPs are often located in closer proximity to the BSA.

PLAN AND EXECUTE THE BRIGADE SUPPORT BATTALION MOVEMENT AND BRIGADE SUPPORT AREA OCCUPATION

Proper planning and staff work can minimize congestion at the BSA and prevent negative impacts on defense execution. Staff planning should determine when elements of the organization will move to occupy the BSA.

For example, planning and coordinating with the support operations (SPO) officer and operations officer (S-3) can determine when essential logistic platforms must move and occupy, and therefore enable SPO to begin at the BSA. These movements must translate into support of the maneuver plan and BCT mission. Determining when the BSA will achieve initial operational capability versus full operating capacity is essential in planning the concept of support and must be communicated across the BCT. Occupation of the BSA begins with occupation by the quartering party (QP). After the QP, the other elements of the BSA are tactically divided into serials to conduct the tactical road march. All units will report directly to the CP upon arrival with the number of personnel, vehicles, and equipment entering the BSA.

DISPLACEMENT CONCEPT OF THE OPERATION

Three critical convoys exist with displacement operations, each with varying roles and responsibilities to ensure the movement of troops without loss of command and control. These convoys are the QP, responsible for site security; main body 1 (MB1), responsible for moving critical nodes and personnel; and trail party, responsible for closing out the old BSA location.

Before the QP movement, the trail party establishes the tactical command post (TAC). The TAC is operationally controlled by the assistant S-3 and is responsible for command and control of forward movements while the battalion CP breaks down and displaces. When the QP occupies and secures the new BSA location, this becomes the trigger to begin the movement of MB1.

Upon MB1 arrival, the battalion XO places MB1 elements into their company locations. The arrival of additional main body elements is based on triggers, and each main body element is emplaced by company first sergeants or XOs. The final movement will always be the trail party, which only displaces once the CP assumes command and control at the new location and when all other elements are on the move forward. The handover between the CP and TAC occurs using the unit's primary, alternate, contingency, and emergency (PACE) communications plan, usually through Joint Capabilities Release (JCR) or frequency modulation (FM) communications. Another method is to emplace the TAC with the QP to establish forward command and control as soon as possible. However, this increases risk to key personnel.

CONDUCT QUARTERING PARTY OPERATIONS

The QP is the first element of the BSB to arrive at the new BSA and therefore it has the first opportunity to get eyes on the terrain and make adjustments to the BSA location and defense. Its mission is to occupy and secure the new BSA location, verify that it is suitable to support brigade resupply operations, and make limited preparations for receiving the rest of the organization. The QP should consist of crew-served weapons (preferably gun trucks) and include the BSB XO as the mission commander. The BSB XO supervises priorities of work and manages all CP operations in the absence of the BSB commander. The QPs usually marshal one hour before starting and conduct tactical movement two hours before the main body. The QP should check the route for

obstacles and known or suspected enemy activity and place route markers at appropriate points if necessary. The QP is responsible for the initial security reconnaissance and chemical, biological, radiological, nuclear, and high-yield explosives (CBRNE) sweeps of the BSA. The purpose of security reconnaissance is to determine the threat environment with regards to enemy, CBRNE, and civilians on the battlefield. This denies enemy movement along avenues of approach. The FM and JCR communications should be continuous. Upon arrival to the new BSA location, the QP's top five priorities are to confirm a suitable BSA location, conduct a CBRNE sweep, emplace crew served weapons on key terrain, establish the ECP, and transfer communications from mobile platforms to the new BSA CP. The QP then establishes tenant areas of responsibility on the BSA and makes changes in the defense concept as needed. It is recommended that the QP bring signs or cones and chemical lights to help outline the initial BSA layout and color code each company. This will ease occupation efforts and eliminate the confusion that sometimes takes place during BSA establishment. QP personnel reconnoiter the new area, mark unit positions, and guide MB1 elements into these new positions as they arrive.

The Top Five Priorities of Work for the Quartering Party

- Confirm the suitable BSA location
- Conduct CBRNE sweep
- Emplace crew served weapons on key terrain
- Establish the ECP
- Establish communications and new BSA CP

CONDUCT MAIN BODY 1 OPERATIONS

The MB1 is synonymous with the commonly misused term advanced operational node. The critical nodes necessary for mission command and SPO travel with the MB1 element. MB1 generally consists of one third of the BSB's assets and is under the direction of the BSB SPO officer. MB1 start points at "H-hour" and transports mission essential supplies, personnel, and equipment to the BSA. The key personnel that are normally assigned to the MB1 are a battalion SPO officer, a battle captain/noncommissioned officer (NCO), a signals officer (S-6), an operations sergeant major, company XOs, a CBRN team, a convoy escort team (CET), and Role 2 medical personnel. The key elements of MB1 are battalion and company CP nodes, a small support package of all classes of supply, a maintenance control shop, and the remainder of Role 2 (if not detached). The MB1 should have a representative from each company and attached unit to assist in directing follow-on elements to their locations. The same Soldiers, vehicles, and equipment should deploy with the QP each time the BSA moves. These Soldiers must know where their respective companies and sections will be located in the new BSA. Any changes to composition are given to the battalion SPO officer at the time of movement order back brief.

Main Body 1 Roles and Responsibilities

The following are unit roles and responsibilities for the MB1:

- The battle captain/noncommissioned officer serves as the focal point for battle tracking and information management in the CP. The battle captain receives and disseminates information, manages the staff journal, and tracks the battle using the Army Battle Command System. The battle captain and S-3's duties are often not specified to the level of detail necessary to prevent overlap. This often results in the battle captain and the S-3 performing the same requirements.

- The operations sergeant major is responsible for establishing the BSA CP and managing the CP ECP. They ensure priorities of work are being followed and assign perimeter security responsibilities to organic and tenant units. They also position organic and tenant units within the BSA. Cones, stakes, pickets, and chemical lights (low visibility) should be used to designate unit placement. Unit designation markings should be described in the BSB tactical standard operating procedure (TACSOP). The operations sergeant major normally exercises mission command over the quick reaction force. In conjunction with the BSB command sergeant major, they coordinate BSA establishment and consolidate the BSA defense plan. Typically, operations sergeant major responsibilities are not clearly defined and the position is not used to its maximum potential.

- The BSB S-6 is responsible for establishing internal communications and distant station communications with the supported brigade via OE-254 antennas. They establish and maintain networks, automation systems, systems administration, and systems/software security for the CP and BSA. They ensure integrity of the FM and digital communications networks. The S-6 also ensures sustainment automation support for the security and use of very small aperture terminals and the wireless Combat Service Support Automated Information System Interface network.

- Company XOs exercise mission command over companies in the absence of the company commander. They are responsible for the accountability of company personnel and equipment, and ensuring they arrive at the new BSA. Company XOs ensure priorities of work and security procedures are being followed in accordance with the BSB TACSOP and commander's intent.

- CBRN teams are responsible for conducting CBRN reconnaissance, detection, and decontamination operations before BSA occupation. If chemical agents are detected, Soldiers should assume mission-oriented protective posture 4 and egress the contaminated area. The CBRN team reports directly to the BSB XO, and on order, executes a displacement plan to occupy a different location. CETs are responsible for convoy security. The CET will conduct security sweeps and establish a hasty defense immediately upon arrival. Convoy protection platform vehicles should be up-armored and mounted with a crew-served weapon. At a minimum, CETs must be prepared and able to protect BSB personnel and equipment from level I enemy attacks.

- Role 2 medical personnel are responsible for establishing Role 1 and 2 health services support for the BSB and BCT. This includes treatment of battle injuries and disease non-battle injuries, triage of casualties, and preparation for evacuation to Role 2. Role 2 personnel must be able to provide evacuation of patients by ground to and from the BSA. Role 2 is a critical capability that contributes to the sustainment warfighting function (WfF). The timely establishment of Role 2 capabilities is a priority when conducting field/contingency operations.

TRAIL PARTY

The trail party is often overlooked and under planned during displacement operations and is used as a catch all for equipment and personnel. This diminishes its usefulness and limits its contributions and effectiveness to the overall operation. The trail party has very deliberate functions. Primarily, it serves as the battalion TAC during displacement, and controls recovery assets for equipment break downs en route and when closing out the old BSA location. As such, the elements of a trail party should include an S-3 vehicle, security vehicles, and recovery assets.

The trail party serves as the TAC before the QP start point, and gives MB1 elements time to prepare for movement. They command and control from a high mobility multipurpose wheeled

vehicle equipped with JCR and dual FM radios, which provide redundancy in communications with forward convoys. This element should also be equipped with at least two recovery vehicles, to serve as a final net for any vehicles that may have broken down en route to the new location. Caution should be used to ensure that recovery assets are dispersed across all convoys and not all placed on the trail party. Security trucks are necessary on the trail party to provide security at the old location. As the number of trucks at the old site lessen and the time observed for displacement increases, the risk of a potential attack increase.

ESTABLISH AND FOLLOW PRIORITIES OF WORK

Priorities of work is a set method of controlling the preparation and conduct of BSA operations. All BSA elements execute priorities of work. During execution, the commander's intent spurs disciplined initiative. TACSOPs should describe priorities of work in an H-hour sequence timeline and format. Upon BSA occupation, security is the first and foremost priority. Many BSBs do not prioritize BSA security, which leads to higher potential for attack. BSA occupation must be a well-rehearsed operation, and all arriving Soldiers should have an understood task and purpose. Unit standard operating procedures should establish the priorities of work for all Soldiers during the occupation and establishment of the BSA. Load plans are critical to BSA establishment. If a needed item is buried at the back of the truck, searching for it creates lost time and effort. Load items backward so that the critical and essential items can be off-loaded first.

Some of the tasks associated with establishing security are emplacing weapon systems, establishing communications, designating final protective fires and lines, emplacing obstacles, and building fighting positions. For sustainers in the BSA, additional considerations must be incorporated into the priorities of work, such as constructing berms of fuel assets and ammunition in the ammunition transfer holding points, identifying supply evacuation routes, and establishing decontamination sites. Once the perimeter defense is established and supplies have been received and are ready for distribution, then rest and chow plans can be prepared.

Without published, enforced, and rehearsed priorities of work, occupation will be frustrated and require unnecessary time before full operations can begin.

The following are some examples of priority specified tasks:

- Conduct area reconnaissance
- Conduct a chemical/security sweep
- Emplace and man crew-served weapons and ensure interlocking sectors of fire
- Designate alternate and supplementary fighting positions
- Emplace CBRNE, M22, and M256
- Emplace listening posts/observation posts
- Identify company areas
- Implement traffic patterns
- Establish ECPs
- Emplace obstacles/passive security
- Establish FM/JCR communications

- Establish hasty fighting positions
- Establish CPs
- Emplace triple strand concertina wire for the perimeter and CPs
- Establish Role 2
- Establish company CPs
- Erect camouflage
- Conduct communications checks with company CPs
- Complete range cards and submit them to S-3
- Position sustainment assets
- Complete BSA sector sketch
- Dig grey water pits/establish containerized kitchen
- Establish sleeping tents
- Improve fighting positions
- Conduct rehearsals
- Continue area improvement

Prioritize combat power for protection integration before other objectives are met. Other priorities of work should include establishing communications, upper and lower tactical Internet, CP operations, survivability positions, and ECP operations. An effective priority of work H-hour sequence maximizes time and space while synchronizing sustainment and protection WfF tasks.

CONCLUSION

This chapter provides a starting point for executing BSA displacement and occupation. It covers lessons learned and best practices that BSBs can use to plan, prepare, execute, and conduct BSA displacement and occupation operations. BSA displacement and occupation takes practice and repetition. The faster the BSA can tear down, move, and set up, the more responsive the support will be to the BCT. The BSB must be versatile and agile enough to adapt quickly and be able to shift with little effort from focusing on sustainment operations to BSA defense. The military decision-making process that once required days to implement, must now be recognized, communicated, and enacted far more quickly. BSA layout, location selection, carefully selected convoy movement elements, and priorities of work are the keys to success.

CHAPTER 17

Brigade Support Battalion S-2 Guide to Large Scale Combat Operations: Winning Matters and Starts Before Combat

CPT Seunghee Chong

The battlefield of the past has logged the unforgiving nature of combat. The battlefield of tomorrow is constantly and quickly evolving. Two things are certain in combat — whether the fight is against irregular forces in low-intensity conflicts or conventional forces with near-peer capabilities — winning matters and starts before combat. This chapter highlights the tactical advantage gain, i.e., how to set conditions at home station and validate those preparatory actions at the combat training centers (CTCs) before stepping on the ground for large scale combat operations (LSCO).

The S-2 must set conditions for LSCO upon assuming the brigade support battalion (BSB) S-2 position. While at home station they can operationalize the tactical processes, systems, and communications plans and initiate intelligence preparation of the battlespace (IPB). Steady state garrison S-2 duties, responsibilities, and tasks are repetitive. Yet repetitive activities develop, exercise, refine, and validate (DERV) a higher level of proficiency, efficiency, and effectiveness that is critical to maintaining accountability, compliancy, and readiness. DERV methodology should be applied to the tactical S-2 condition setting requirements. This can develop proficiency, efficiency, and effectiveness that is critical to sustaining accountability, lethality, and survivability in LSCO.

In LSCO, the BSB S-2 must provide timely, accurate intelligence that enables the sustainment coordinator (SUSTCOORD) to make critical command decisions. The S-2 must be able to consistently process data, fuse the pulled data to confirm or deny intelligence gaps, and manage intelligence, surveillance, and reconnaissance assets to answer priority intelligence requirements (PIRs).

For the data to be consistently processed, the S-2 must understand who, what, when, where, and how the data is being transmitted. Once the intricacies and nuances of the information flow architecture are grasped, the S-2 must DERV a process to manage the surplus of raw data. This raw data can include:

- Enemy significant activities (SIGACTs),
- Enemy battle damage assessments (BDAs),
- Operational variables (political, military, economic, social, information, infrastructure, physical environment, and time [PMESII-PT]),
- Terrain data (observation, concealment and cover, obstacles, key terrain, and avenues of approach),
- Light and weather data, and
- Single source intelligence reports.

This process arms the S-2 with the current and relevant data necessary to build shared organizational understanding.

The next step is to DERV a process that enables analytical fusion of the collected data into actionable intelligence. The purpose of this process is to corroborate either with single or multiple source intelligence and build the data veracity that is necessary to enable the SUSTCOORD's decision-making. This process could provide early warning to the brigade support area (BSA) and increase chemical, biological, radiological, and nuclear mission-oriented protective posture levels or indicate a be-on-the-look-out list associated with irregular forces and hostile non-combatants in the support zone.

Observations at the National Training Center (NTC) show that BSB S-2s do not comprehensively understand the information flow architecture or processes. This means it is difficult for them to manage data encountered friction while maintaining pace and bandwidth with operations. BSB S-2s can miss relevant information or become overwhelmed with raw data. BSB S-2s who were able to establish database management processes, but did not subsequently establish analytical fusion processes, create uncertainty by providing unverified information.

To avoid facilitating uncertainty, the S-2 must DERV a process for information collection management. This process enables managing internal battalion collection capabilities for direct support, and collection assets external to the battalion and echelons above brigade for request to collect. The S-2 must consider all collection capabilities in the BSB's area of interest. This includes the division sustainment support battalion's logistics package, which supports the BSB, and organizations that share the same lines of communications (ground and air), from the aviation task force to nongovernmental organizations. Figure 17-1 shows a tactical BSB S-2 cycle for providing timely, accurate intelligence.

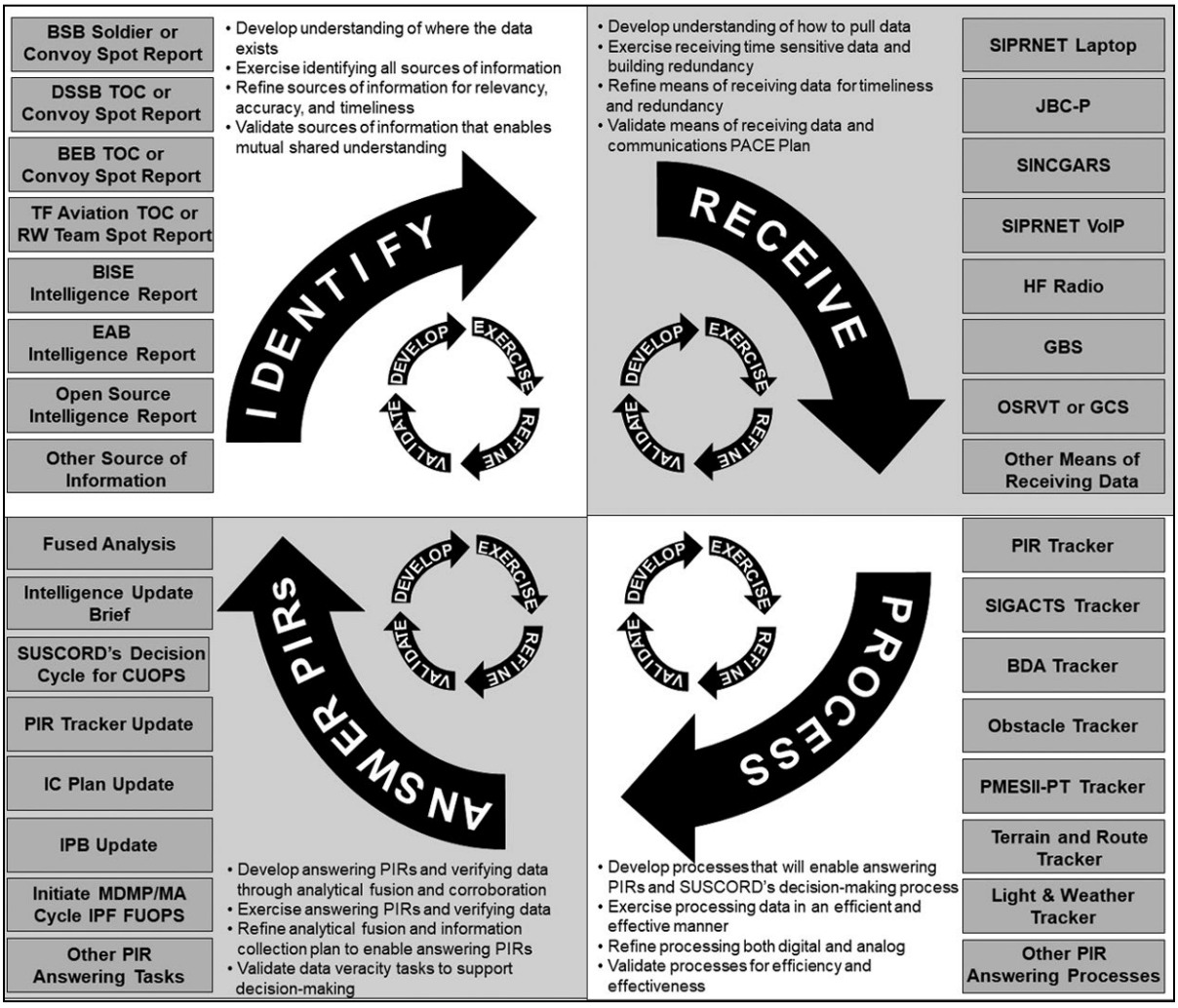

Figure 17-1. Tactical BSB S-2 Cycle for Providing Timely, Accurate Intelligence

Following the establishment of tactical processes, the S-2 must DERV two systems to support those processes — the tactical standard operating procedure (TACSOP) and common intelligence picture (CIP). These capture tactical S-2 functionality for knowledge management and create shared understanding through visualization at the BSB command post.

The TACSOP is a standardized tactical plan and includes the following: duties and responsibilities, battle tasks, battle rhythm events, battle drills, communications plan, and the CIP layout. It also includes the standardized format for the threat brief, situation report for enemy sighting and contact, intelligence synchronization brief, convoy debrief, light and weather report, enemy SIGACT tracker, enemy BDA tracker, and PIR tracker. The TACSOP guides the construction of the CIP.

The CIP is a standardized tactical visualization product, analog and digital, and includes the following: topographic map, modified combined obstacle overlay, threat overlay, enemy SIGACT tracker, light and weather data and effects, information collection synchronization matrix, PIR tracker, named areas of interest overlay, and unmanned aircraft systems live feed. As an end product, the CIP should only display relevant operational data that enables shared understanding and the SUSTCOORD's decision-making.

Observations at the NTC show that BSB S-2s who did not DERV a TACSOP were not proficient, efficient, or effective at enabling the BSB with a timely and accurate CIP. These S-2s often copied and pasted brigade products, rather than tailoring to BSB-specific intelligence.

Once the tactical systems are established, the S-2 must DERV a communications primary, alternate, contingency, and emergency (PACE) plan. The communications PACE plan must consist of four feasible and independent methods of communication. It is always the subordinate element's responsibility to establish communications with its higher echelon, whether the brigade combat team (BCT) communications PACE plan designates a distributed common ground system-Army, Command Post of the Future, Secret Internet Protocol Router Network (SIPRNET) laptop, Joint Battle Command-Platform (JBC-P), single-channel ground and airborne radio system (SINCGARS), tactical satellite (TACSAT), or high frequency (HF) radio.

After establishing a nested communications PACE plan, the BSB S-2 should use the processes and systems in the communications plan to validate all tactical S-2 functionality. The S-2 should take advantage of organizational-level synchronization and validation events, like the communication exercise, staff exercise, tactical operations center exercise, command post exercise, or field training exercise.

Observations at the NTC show that BSB mission command warfighting functions that were not feasible or sustainable for all contested domains (land, maritime, air, space, cyberspace, and electromagnetic spectrum) of LSCO, and failed to capitalize on the in-depth employment, integration, and synchronization of the classified Army Battle Command System and combat net radio systems that are required to operate in a communications security (COMSEC) environment. Most BSB S-2s were dependent on a primary communications platform (a SIPRNET laptop with voice over internet protocol) because of proportionate allocation, dedication, and availability. Limited communications platforms (JBC-P, SINCGARS, TACSAT, and HF radio) restrict the accountability of time sensitive data, and timely data depends on the radio telephone operator's ability to monitor and relay.

Once the processes, systems, and the communications PACE plan are validated, the S-2 must initiate IPB. LSCO will not be in southern California or central Louisiana or Hohenfels, Germany. Nor will the adversaries be the Donovians or Skolkan Alliance. Yet, as the foundational echelon of tactical intelligence, it is absolutely critical to get in as much IPB repetition as possible to yield a higher level of analytical proficiency, efficiency, and effectiveness.

IPB is defined as the systematic process of analyzing the mission variables of enemy, terrain, weather, and civil consideration in an area of interest to determine their effect on operations.[1] Fortunately, the physical terrain, civil terrain, weather, and enemy at the CTCs do not often drastically change. The S-2 should provide an in-depth analysis of those mission variables while at home station. Initiating the four steps of IPB assists not only commanders with reducing battlefield uncertainty, but the S-2 as well. Furthermore, while evaluating the mission variable effects, the S-2 builds mutual relationships and trust with the BCT S-2, brigade intelligence support element, and sister battalion S-2s.

As a result, the S-2 has an 80 percent accurate picture of how the physical terrain will look. This is helpful for planning cross country mobility for mounted and dismounted maneuver forces. This also allows the BSB S-2 to look for suitable slopes and elevations to establish the BSA, forward logistics element, helicopter landing zone, ambulance exchange points, and logistics release points. They can see what civilian terrain looks like in terms of PMESII-PT variables. The S-2 can see the historical light and weather data, and how those effect operations, terrain, mechanical systems,

and warfighters. At the very least, the S-2 can see what the enemy looks like, their equipment and electronic order of battle, and their doctrine, tactics, techniques, procedures, capabilities, limitations, and weaknesses.

BSB S-2s at the NTC who did their homework were not only beyond the conceptual and practical application phase, but were already anticipating requirements, triggers, and decision points and executing intelligence support at pace, tempo, and operation bandwidth.

All home station preparatory actions developed in a controlled environment must be field tested at the CTCs. Time, resources, and security are always concerning factors. There are no training environments that replicate the battlefield of tomorrow like the CTCs. The permanent opposition forces (OPFORs) at the CTCs are perhaps the most proficient, efficient, and effective units in the U.S. Army. This is because they have multiple repetitions, rotation after rotation, to master the science and art of combat tradecraft through trial and error. For that reason, every BSB supporting a BCT that is aligned to a CTC must make that repetition count. The objective of a CTC rotation is not to defeat the OPFOR, but to self-assess and validate all the preparatory actions that are required to continuously learn and improve the unit's agility, adaptability, and lethality.

Winning starts before combat, and all humans are creatures of habit. The DERV methodology emphasizes developing conceptual understanding into practical application, exercising on a routine basis to reach a second nature muscle memory, refining processes and systems for purpose of efficiency and effectiveness, and validating the entire method in a replicated LSCO environment. In that sense, the BSB S-2 operationalizes the tactical processes, systems, and communications PACE plan; initiates IPB; and validates those preparatory actions at the CTCs. By doing so, the tactical advantage has been gained before answering the nation's call.

Endnote

1. Army Techniques Publication (ATP) 2-01.3, *Intelligence Preparation of the Battlefield*, 01 March 2019.

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CHAPTER 18

Operate and Leverage All Battle Command and Logistics Information Systems

CPT Mahesa Suprobo and COL Brent Coryell

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations, February 2019*, with updates by CPT James Longo)

The brigade support battalion (BSB) must leverage the full spectrum of its communication assets to track and transmit sustainment information in a decisive action environment. The BSB mission relies on the ability to establish connectivity expeditiously and extend communication support to convoy operations and subordinate, lateral, or higher units throughout the battlefield. BSBs sometimes fail to effectively employ or leverage the assigned capabilities of the Army Mission Command System and Logistics Information System (LIS) while supporting command post (CP) operations. CP operations require these systems for data collecting, processing, archiving, displaying, and disseminating. These systems enable the BSB commander to confidently understand, visualize, describe, and make informed decisions supporting the brigade combat team (BCT) fight.

ESTABLISH CLEAR ROLES AND RESPONSIBILITIES AMONG THE SIGNAL COMMUNITY

The BSB has three separate communication support entities that operate independent of each other. These entities are the BSB S-6, the communications and electronics (C&E) shop, and the Sustainment Automation Support Management Office (SASMO). The overlap of responsibility between these entities sometimes leads to confusion or duplication of effort. The S-6 focus is internal to battalion automation. The C&E shop provides area support or direct support to a BCT. The SASMO manages LIS communications and operations, management, and security. The delineation of roles and responsibilities between these sections is critically important because the key leaders perform similar and vital roles. Below are some suggestions for eliminating the duplication of effort.

The BSB S-6 officer in charge (OIC) is a signal officer responsible for managing and training all signal personnel in the battalion. This OIC's primary responsibility is to advise the commander on all things signal related. The OIC ensures that the signal plan is fully developed and disseminated. The S-6 is also responsible for understanding the full range of BSB limitations and capabilities regarding communication, information assurance, and knowledge management. As a staff officer, the S-6 must maintain running estimates, conduct map reconnaissance, and understand the BSB mission. The BSB S-6 OIC is responsible for coordinating all communication equipment maintenance and technical support within the battalion. The S-6 should also ensure communications representatives and SASMO personnel are trained and certified. The S-6 should develop inspection programs to evaluate both the C&E shop and the SASMO shop.

The C&E shop should be leveraged for communication maintenance and assisting commanders with developing their communications maintenance programs. The C&E shop provides direct support for communication system maintenance and repair for the brigade and installation. The C&E shop troubleshoots and repairs cryptographic radio systems, Joint Capabilities Release (JCR) logistics systems, and other electronic systems, such as night vision devices or others. The C&E shop maintains and orders replacement parts for these systems.

The SASMO manages LIS communications and operations, management, and security. The SASMO plans, manages, and directs communications operations, including the establishment of communications networks and systems and the installation and maintenance of equipment. The SASMO performs communications reconnaissance and survey, assisting the support operations (SPO) officer in positioning key elements of logistics and sustainment nodes. The SASMO often operates with limited training or experience, missing the proper certifications and credentials required by their military occupational specialty.

KEEP THE COMMUNICATIONS PORTION OF THE TACTICAL STANDARD OPERATING PROCEDURES UPDATED

The S-6 OIC needs to review the battalion tactical standard operating procedures and ensure that the battle drills, signal operating instructions, pro-words and call signs, challenge and responses, and other pertinent information are all up to date and accurate.

ENSURE PROPER COMMUNICATIONS EQUIPMENT DISTRIBUTION ACROSS THE BRIGADE SUPPORT BATTALION

Communications equipment is frequently consolidated in the "comms closet" at company or battalion level. This prevents proper preventive maintenance checks and services (PMCS), updates, and 10-level training or familiarization on the equipment. The S-6 needs to review the modified table of organization and equipment (MTOE) and property book to determine where equipment belongs, what the unit has on hand, and what is full mission-capable. The S-6 section should distribute all equipment to the MTOE designated sections. The JCR, frequency modulation (FM) radios, and vehicular radio configurations need to be assigned to sections and vehicles and associated with vehicle bumper numbers. All vehicles need to have the MTOE vehicle radio configurations installed. These systems should be locked in with locking bars and zeroed when not in use. The S-6 and C&E shop should have Electrical and Electronic Properties Measuring and Testing Instrument (AN/PRM-36) radio test sets to test radio transmission capabilities. These test sets are critical for determining good and bad systems, which are rolled up in the S-6 staff estimates.

PRODUCE ANNEX H OF THE MISSION ORDER

The S-6 completes Annex H to determine signal requirements and plans. The only Soldiers that routinely review Annex H are the S-6 Soldiers and the brigade S-6. Any critical tasking must be coordinated with the S-3 and placed in the base order. The S-6 provides voice, video, and data to the BSB, and Annex H spells out, in operation order format, how these should be provided to the unit. Appendix D of Field Manual 6-0, C*ommander and Staff Organization and Operations*, 05 May 2014, provides a template that should be followed verbatim when developing the Annex H.

Annex H Instructions and Template

Situation. This section includes anything that impacts signal operations.

Mission. This section provides a mission statement for the signal plan, in support of the base order for the BSB operation.

Execution. This section is where the scheme of signal support to operations is outlined. Any coordinating instructions or tasks to subordinate units must be placed in the base order, since the likelihood of subordinate organizations reading Annex H is very small. All subsections of the scheme of signal support are drawn in their associated appendices.

Sustainment. This section identifies the priorities of signal support and the associated key tasks.

Command and Signal. This section lists the signal operating instructions and network reporting requirements.

Appendices. These sections should always be the same and listed as identified in Field Manual 6-0. If an appendix is not used, this should also be annotated. These appendices should include details on defensive cyberspace operations, information network operations, various voice, video, and data network diagrams, satellite communication information, spectrum management, and information services.

ESTABLISH A COMMUNICATION-FRIENDLY COMMAND POST LOCATION

CPs are often set up in environments that conflict with signal throughput. The S-6 OIC must have a major influence in the placement and organization of the CP. Carefully coordinated and planned CP setup is critical to ensuring the proper placement of signal assets. The S-6 should work with the executive officer, the S-3, and the SPO officer to get the location right. The battalion must organize the CP in a way that allows organized placement of cabling and easy setup of antennae.

FOLLOW THE PRIORITIES OF WORK

S-6 personnel should be included with every torch/quartering party to validate the location of a new brigade support area (BSA) or CP. The S-6 OIC/noncommissioned OIC ensures that initial communication assets are established and that the location is practical for signal operations.

ESTABLISH THE RADIO TELEPHONE OPERATOR VEHICLE

The S-6 provides the radio telephone operator (RTO) with a vehicle to monitor the JCR and radio at all times during BSA reconnaissance and setup. The RTO vehicle should be equipped with JCR and constantly monitored during quartering party missions and the setup of CPs. The RTO vehicle should also be equipped with a VRC-92, which allows for dual extended range transmissions. This allows approximated planning for a range of 20 to 30 kilometers. The RTO vehicle should be equipped with a vehicle-based high frequency (HF) and tactical satellite radio, and a circular HF vehicle antenna. The RTO should monitor both battalion and brigade nets. Two antenna masts should be on hand with the quartering party to ensure that both antennae can pick up long-range transmissions. The RTO should not leave the vehicle until the placement of communications equipment is set in the CP.

ESTABLISH FREQUENCY MODULATION COMMUNICATIONS WITH THE BRIGADE MAIN COMMAND POST

This should be the first priority upon arriving at a new BSA location. The S-6 should immediately erect an OE-254 or COM201 antenna and connect it into the power amplifier of the RTO vehicle radio system. Although the antenna is temporary, it extends the range of the FM communications until the CP is established.

ESTABLISH THE RADIO TELEPHONE OPERATOR DESK

When displacing the BSA or establishing a forward logistics element (FLE), the FLE RTO desk should be equipped with systems that mirror the brigade primary, alternate, contingency, and emergency (PACE) plan to ensure redundant reach-back capabilities. The RTO will monitor both Joint Battle Command-Platform (JBC-P) and FM. The RTO needs to monitor brigade command,

battalion command, and the operations and intelligence nets. Give care and attention to the proper spacing of antennae outside the CP when establishing the "antenna farm." The JBC-P should be one of the main systems at the RTO desk. To display the content of the JBC-P in the CP, run a video graphics array cable from the RTO desk JBC-P and connect it to a projector or Juniper system. This creates situational awareness, shared understanding, and a common operational picture (COP) for tactical operations and the commander. When available, the CP platform, which is equipped with BSB radio systems and an enhanced micro central switching unit, should be used to bridge the systems on the integrated tactical network into the upper tactical Internet network through the Tactical Operations Center Inter-Communication System (TOCNET). The TOCNET provides access to radio transmissions using the software-based crew access unit (CAU) on the Secret Internet Protocol Router Network (SIPRNET) or voice over internet protocol (VoIP), or the hardware based CAU established at the RTO desk. The CAU enables the RTO to monitor multiple radio networks through the upper tactical network.

ESTABLISH THE COMMAND POST MISSION COMMAND SYSTEM AND LOGISTICS INFORMATION SYSTEM CONNECTIVITY

The S-6 tent of the CP should be erected at the same time as the BSB CP so that the placement of the command post nodes (CPN) can be established and work can begin on positioning and setting up the upper tactical Internet network. S-6 personnel should not be tasked with other duties until all communications are completely established. The high capacity line of sight (HCLOS) should be the primary transmission mode of upper tactical Internet and established simultaneously with the satellite transmission terminal (STT).

ESTABLISH ROUTINE S-6 OPERATIONS

After all systems are up, the S-6 should switch to help desk operations, communications security (COMSEC) fills, radio troubleshooting, routine maintenance, and CP space improvements (such as tidying cables and organizing work space). The RTO conducts radio checks with brigade and companies every hour and annotates on the log (Department of Army [DA] Form 1594, Daily Staff Journal or Duty Officer's Log, 01 December 2019). S-6 personnel should be protected from most tasks to conduct continuous troubleshooting and ensure systems remain operable. Figure 18-1 below shows a BSB network.

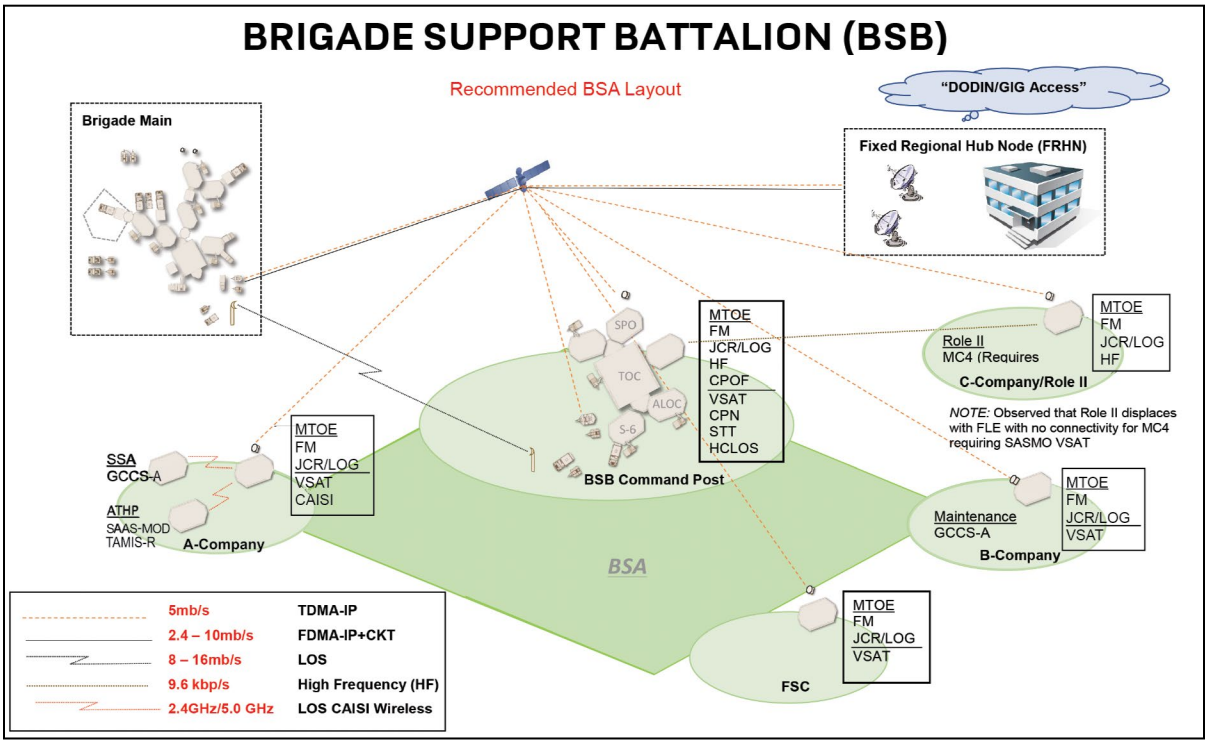

Figure 18-1. BSB Communication Network

TRANSMISSION PLATFORMS

The BSB transmission platforms are the backbone of support for the Army Mission Command System and LIS communication systems. These platforms include the CPN, HCLOS, STT, very small aperture terminal (VSAT), Combat Service Support Automated Information Systems Interface (CAISI), SIPRNET, and Non-classified Internet Protocol Router Network (NIPRNET).

ESTABLISH THE COMMAND POST NODE

The BSB's single CPN capabilities become stretched when supporting an FLE or displacing a BSA. When conducting split operations, a second CPN is useful. This additional capability extends the communications' operational reach for the BSB. When the BSB jumps onto the FLE, the second CPN ensures uninterrupted upper tactical Internet service in the BSB. In addition to the CPN, the BSB requires the CPN team, STT, TOCNET, and HCLOS.

ESTABLISH AND LEVERAGE THE USE OF THE VERY SMALL APERTURE TERMINAL AND SIPRNET/NIPRNET ACCESS POINT

The BSB has insufficient equipment to extend tactical Internet down to the levels that are required for sustainment operations. The VSAT is easy to deploy and set up takes less than 30 minutes without assistance. The SIPRNET/NIPRNET Access Point provides the same capability as the VSAT, with the addition of SIPRNET access. The BSB typically has three VSATs assigned to the SPO SASMO, supply support area, and the maintenance company. Other sections within the battalion, such as the ammunition transfer holding point (ATHP), are equipped CAISIs. The battalion should request an additional VSAT or SIPRNET/NIPRNET Access Point for the C-Company (the medical company) to ensure Role 2 is able to connect the medical communications for combat casualty care.

ESTABLISH AND LEVERAGE THE USE OF THE TACTICAL OPERATIONS CENTER INTER-COMMUNICATION SYSTEM

TOCNET is a widely underused system within the BSB. TOCNET enables the connection of the Integrated Tactical Network Environment into the upper tactical Internet network. This allows the BSB to extend FM communications beyond line of sight and enables access to radio transmissions through secure VoIP and SIPRNET. All BSBs should set up TOCNET in field environments.

ESTABLISH COMBAT SERVICE SUPPORT AUTOMATED INFORMATION SYSTEMS INTERFACE

Connect the CAISI to the supply support activity VSAT so that a wireless link can be established with the ATHP. This enables the ATHP to implement the Standard Army Ammunition System-Modernized and Total Ammunition Management Information System (TAMIS), redesigned as TAMIS-R.

ESTABLISH NIPRNET/SIPRNET

Work sections in the battalion often request too many systems for an austere field environment. Sections must be cognizant that they are not operating in garrison. The CPN can operate a maximum of 40 NIPRNET and 40 SIPRNET systems. When the CPN is operating at max capacity, it will slow down connectivity. The S-6 should advise sections to determine their bare minimum operational need. The SPO officer and the S-3 are the S-6's primary customers. There should be a maximum of 10 systems for the SPO office and 10 systems for the S-3. These systems can be shared between personnel through 24-hour operations and shift management.

It is recommended for the S-1 and S-4 sections to share two NIPRNET systems per section. The chaplain also requires a NIPRNET system to conduct their work. In a tactical environment, the SIPRNET computer should be the primary system for maintaining products. This reduces the risk of materiel falling into enemy hands. Only a few NIPRNET systems should be employed for operational need.

ESTABLISH AND LEVERAGE THE USE OF VOICE OVER INTERNET PROTOCOL

The CPN only comes with a small number of VoIP phones. The S-6 must gather the section's phone requirements, and if additional phones are needed, the unit can purchase them. The VoIP phones can be tethered together with computers to share the ports on the CPN.

ESTABLISH BRIGADE COMBAT TEAM RETRANSMISSION AT THE BRIGADE SUPPORT AREA

FM range sometimes limits the ability of the BSB to maintain communication with logistics packages, adjacent friendly forces, or the BCT main CP. The BSB requires the capabilities of a retransmission system and three 25U Soldiers to operate the administrative/logistics (A&L) net. The retransmission system extends the FM range and allows the BSA to serve as a reliable BCT CP contingency site. BCTs should require battalions to have retransmission movement of the A&L net around the battlefield to ensure sustainment communication is constant. Although retransmission is not on the BSB MTOE, the BSB can create one using a VRC-92, two antennae, and a fabricated retransmission cable. The S-6 should keep this capability as a contingency in case the need arises. This capability is for emergency use and not considered in staff estimates. The S-6 should also have a full understanding of the brigade retransmission plan and be able to brief communication gaps to convoy commanders before their logistical movements.

ESTABLISH AND LEVERAGE THE USE OF HIGH FREQUENCY AND TACTICAL SATELLITE

The BSB only has one or two of each HF and tactical satellite radio system by MTOE. These systems are often used as contingency and emergency systems on the PACE plan. If only one system is on hand, the S-6 needs to request additional assets for contingency and emergency communications with the battalion tactical CP or FLE. The S-6 should conduct regularly scheduled PMCS on these systems and ensure operators are proficient.

ESTABLISH AND LEVERAGE THE USE OF COMMAND POST OF THE FUTURE

BCTs are replacing Command Post of the Future (CPOF) with the Command Post Computing Environment (CPCE) as the maneuver COP for the BCT. CPCE disseminates information to executers and vehicles at the lowest level. Although it resides at the battalion and above levels, it can still tie into company JBC-P systems to provide accurate and timely information. Secondly, the BSB staffs can utilize the CPCE to create graphics and overlays that normally take large amounts of time on a proper JBC-P system. The CPCE can also create/share with a wide audience quickly and efficiently. With the CPCE tied into brigade imagery and graphics, all systems can have multiple overlays available to see the entire scope of the mission from multiple levels of control. The CPCE serves as a go between to and from JBC-P; is able to send flash, immediate, priority, routine messages; and can monitor real time locations of all personnel tied in the system. Leveraging this system is key to providing shared understanding across the battlefield.

LEVERAGE THE USE OF JOINT CAPABILITIES RELEASE AND JOINT CAPABILITIES RELEASE LOGISTICS AND JOINT BATTLE COMMAND-PLATFORM AND JOINT BATTLE COMMAND-PLATFORM LOGISTICS

BSB personnel across the organization need to be trained in the use of JCR and JBC-P. Using these systems in garrison enhances field operations. Units usually do not use JCR Logistics because it does not communicate easily with the regular JCR system. JCR Logistics is an unclassified system and JCR is classified. Users are not trained on how to make these two systems communicate. JCR Logistics uses the same software as JCR, but has additional logistics related tools and radio frequency identification (RFID) tag trackers. JCR must downgrade its classification in chat or flash, immediate, priority, routine messages for the JCR Logistics to receive it. This makes submitting a logistics status (LOGSTAT) difficult. Minimize the use of JCR Logistics and maximize the use of JCR/JBC-P when possible. The BSB should go to one system, JCR. This single system platform allows for one COP and the ability to communicate across the BCT. This COP is simply an incorporated sustainment overlay built from LOGSTAT reports. The JCR and JBC-P enable beyond-line-of-sight communications down to the individual level, especially during tactical convoy operations.

PUBLISH A PRIMARY, ALTERNATE, CONTINGENCY, AND EMERGENCY PLAN

The PACE communications plans should be practical, properly disseminated, and fully tested before operations. Equipment that is not regularly used or that is not operational should not be included in the PACE plan. The best criteria to use in developing a solid plan are the following:

Suitability. Each item on the PACE plan should serve a purpose, and the plan should be tailored to echelon-level, warfighting function, and mission oriented tasks. There cannot be a "one size fits all" PACE plan because one plan may not be suitable for all functions.

Feasibility. Consider the assets that are available or can be acquired through higher or sister organizations. If the required equipment, or the correct quantities of the equipment, cannot be obtained, they should not be included in the PACE plan.

Acceptability. The methods of communication in the PACE plan should be acceptable to all its users. The order of the PACE plan should be natural and should simulate the flow of operations in the CP during tactical convoy operations, or any other task oriented requirements by the user. If the user cannot easily switch between the items of the PACE plan, the plan will not work.

Distinguishability. Each item of the PACE plan should be distinguishable from the others. Having Transverse, e-mail, and Ventrilo all in the same PACE plan is not practical because they rely on the same communication mode. If that mode is disrupted, the entire PACE plan will be eliminated. Take time to consider the transmission modes for each item and which type of systems they connect to.

Completeness. Too often, units establish a PACE plan in which their contingency and emergency forms of communications are either non-existent or are never tested and set up. This represents a primary/alternate plan and not a PACE plan. Ensure that the PACE plan is complete, tested, and set up immediately upon arrival to the mission location.

MONITOR THE SIGNAL COMMON OPERATIONAL PICTURE

The S-6 is often unaware of the BCT signal COP and does not have shared understanding of signal assets on the battlefield. The signal COP should be developed and placed alongside the other planning products for the BSB. The S-6 must maintain an analog and digital COP. The signal COP should accurately detail the elements that require communication support and their position on the battlefield. The S-6 should consider and incorporate the brigade's signal COP into this product. This includes the locations of other communication assets, such as retransmission sites and the nets that they are broadcasting. The S-6 can use tools such as systems planning, engineering and evaluation devices, and the CPOF to develop the COP.

MONITOR THE BRIGADE COMBAT TEAM ADMINISTRATIVE/LOGISTICS NET

Radio sets should be established for easy communications within the SPO office and administration and logistics operation center sections for the BCT A&L net. Since BSB operations support the entire BCT, there is no need for a battalion A&L net, which only serves to further congest the transmission network.

CONDUCT BATTLE DRILLS

S-6 sections often do not rehearse or disseminate battle drills. The S-6 should work with the S-3 and the S-2 to develop data destruction battle drills, zeroing and destruction of equipment, information assurance response, and spillage response battle drills. The S-6 OIC should have a wake-up criteria briefed to their section to ensure a timely response to systems that are down for an unusually lengthy amount of time. The wake-up criteria is nested within the battalion or higher commander's critical information requirements. The battalion should practice a COMSEC compromise battle drill regularly and must match the BCT's battle drill.

CONDUCT COMMUNICATION EQUIPMENT MAINTENANCE

Use the appropriate 10-level manual for PMCS of radios systems in vehicles. Ensure deficiencies are annotated on DA Form 5988-E, *Equipment Maintenance and Inspection Worksheet*, 01 March 1991, for the vehicle and bumper number it is assigned to. Many ABCS and LIS systems take hours for proper PMCS. The manual should be followed for surface checks of systems and their operating features. This part should only take a few minutes. The systems should be powered on and the virus scan run on the system only during PMCS. The virus scan takes a long time. The system must be left on for 3- to 5-hours to pull any over-the-air updates and keep the system running optimally.

CONCLUSION

The BSB S-6 OIC faces many challenges when planning and managing the BSB communications effort. Care must be taken to work closely with all participating parties. Requirements should to be gathered, and a well thought out plan should be formulated in Annex H. Ultimately, the battalion S-6 needs to take ownership of all signal assets, including equipment and personnel, and be the sole signal advisor to the commander.

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CHAPTER 19

Engagement Area Development for the Brigade Support Battalion: Thinking Beyond the Concertina Wire

MAJ Amanda L. Walton and COL William "Joe" Parker, III

Brigade support battalions (BSBs) are generally well-trained in constructing perimeters and access control points, and placing concertina wire. Though Army Techniques Publication (ATP) 4-90, *Brigade Support Battalion*, 18 June 2020, dedicates many pages to the process of engagement area development, BSBs rarely teach, rehearse, or use engagement area development. Instead, they often opt for a triple standard concertina wire perimeter. Rather than giving the BSB commander "the major advantage… of the ability to select the ground on which the battle takes place," a simple perimeter gives the enemy the choice of where they want to attack the BSA and the freedom of movement to do so.[1] BSB commanders and staffs are not conducting engagement area development, and this results in a shallow defense, giving the enemy an unencumbered approach to the support area.

Example Vignette

The dust settles on a brigade support area (BSA) after a group of 10 irregular forces in two vehicles drive directly up to the perimeter, run over the berm, and toss a piece of plywood over the triple standard concertina wire. A level I threat quickly turned into a level II threat for the BSB. The BSB commander gathers around a map with her staff and company leadership to conduct an after action review and improve their defense.

The BSB commander opens up the discussion, "S-3, talk me through the original BSA security plan."

The S-3 pulls over the whiteboard with the battalion's sector sketch, "Ma'am we have seven crew-served weapon fighting positions, 15 individual positions, two entry control points — one for entry and one for exit — and concertina wire around the perimeter. Our quick reaction force is down to one vehicle and four personnel because of convoy security requirements."

The BSB commander responds sternly, "That's the sector sketch; it's not a plan. Tonight proved that a perimeter isn't enough. Concertina wire isn't enough. We need to funnel the enemy towards where we want to attack them and concentrate all available combat power and fires on that area. Prevent the enemy from knocking on our front door."

She looks around at the staff and commanders. "We've skipped the process that helps us plan a defense in depth. Start engagement area development tonight."

Seven Steps of Engagement Area Development

- Identify all likely enemy avenues of approach.
- Determine likely enemy concepts of operations.
- Determine where to attack the enemy.

- Plan to integrate obstacles.
- Emplace weapon systems (including the preparation of fighting positions).
- Plan and integrate indirect fires.
- Rehearse the execution of operations in the engagement area.

PLAN

The first two steps of engagement area development are to identify likely enemy avenues of approach and determine likely enemy schemes of maneuver. While this S-2 intensive step is at the battalion level, it does not relieve leaders across the BSB from assisting. These two steps are critical to the initial planning phases, as they impact where the support area's physical location. Although accessible avenues of approach facilitate easy distribution and sustainment operations, they also give the enemy easy access to the support area. Successfully visualizing how the enemy may attack and the best way to defeat them, given assets readily available to the BSB, is the leader's reconnaissance. Leaders must "red team" the location and functionality of the BSA. They must understand how to think like the enemy and take into account the most likely/most dangerous courses of action outlined by the battalion S-2 during the military decision-making process (MDMP). Failing to identify and maximize terrain usage can lead to catastrophic results, leaving the BSA with a limited ability to establish a formidable defense and leaving the enemy left with the upper hand. A good practice when conducting the first step of engagement area development is to use returning logistic packages (LOGPACs) to, "…conduct initial reconnaissance…..from the enemy's perspective along each avenue of approach into the sector or engagement area."[2]

After determining where to attack the enemy, the next three steps (positioning obstacles, emplacing weapons systems, and planning indirect fires in support of these obstacles) can prove challenging to BSBs. BSBs lack organic capabilities and rely on brigade-level assets that are rarely prioritized to support the BSA. Because of this lack of organic assets, indirect fire planning is critical, and must be synchronized and understood not just within the BSB, but also at the brigade level. BSBs often have target reference points (TRPs) graphically represented on their maps and/or sector sketches without awareness of observers, desired effects, or what systems adjudicate said targets. Integrating indirect fires into the BSA defense plan requires parallel planning and synchronization with brigade operations and the brigade fires cell. While the likelihood of a direct attachment of assets is low, getting prioritization based on threat assessments is a possibility. The BSB must be ready and trained on the call for fires process, down to the Soldier level. "The BSB S-3 [should maintain] the brigade fires overlay, fire support task matrix, and fire support execution matrix."[3]

Example Vignette (cont)

The BSB executive officer returns from the brigade main command post with good news. He speaks with the BSB commander, "Ma'am, the brigade has allocated three preplanned targets for our engagement area to be adjudicated by the reserve battalion's mortars. Now we need to figure out observers."

There are four obstacle effects: disrupt, fix, turn, block. In Figure 19-1, the fictional BSB S-2 from the introductory vignette has assessed that the enemy will use the western avenue of approach to set up a support by fire position and simultaneously use the eastern avenue of approach to move dismounted forces into an attack by fire. To counteract the enemy's concept of operations, the BSB S-2 and S-3 have decided to block the eastern avenue approach using tank ditch and triple standard

concertina wire, and turn the enemy off of the western avenue of approach into more restrictive terrain, where the commander has decided they want to focus direct and indirect fires (Figure 19-2).

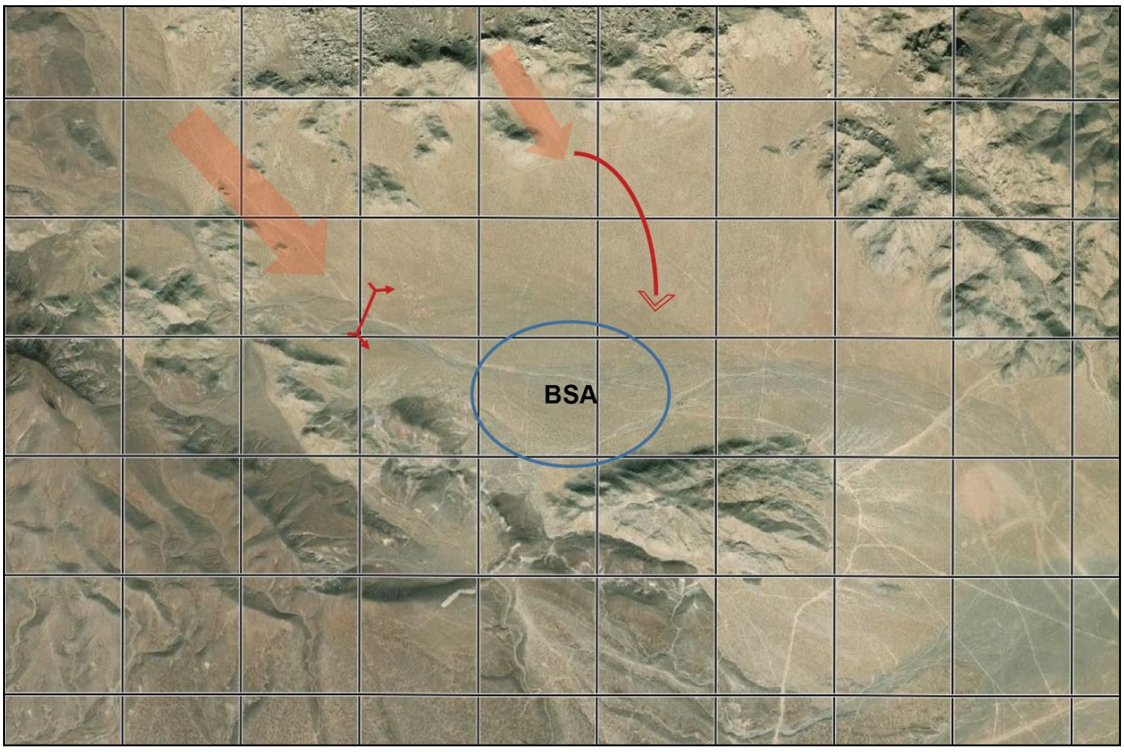

Figure 19-1. Enemy Avenue of Approach on BSA

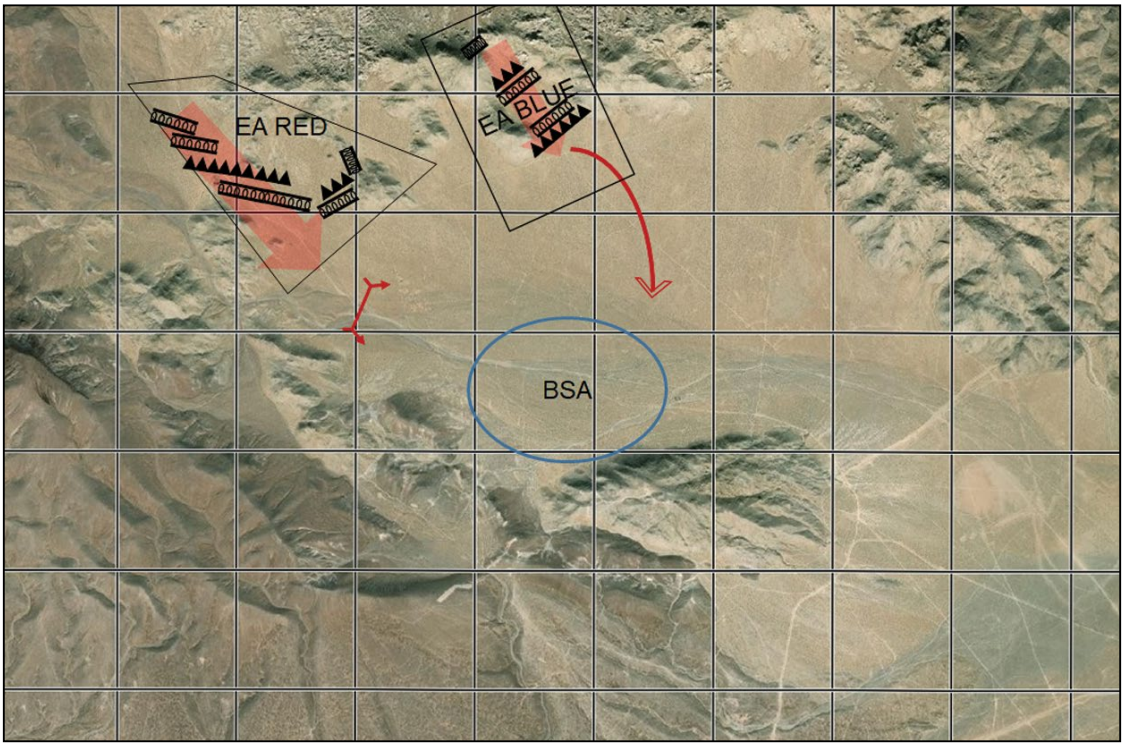

Figure 19-2. Obstacles in the Engagement Area on a BSA

ATP 3-90.1 states that, "The success of any engagement area depends on how effectively the commander can integrate the obstacle plan, the indirect fire plan, and the direct fire plan." There is one more aspect of the defensive plan that BSBs must account for. The BSB commander, "… ensures logistics missions and associated activities continue without restriction."[4] The avenue of approach the enemy takes to the BSA may be the same road that the forward support companies or A-Company BSB takes to conduct LOGPACs. The BSB S-3 must factor in lanes or bypasses that enable heavy transportation assets to move to and from the BSA.

EXECUTE

Example Vignette (Cont)

(The midst of engagement area development)

"S-3! S-3," The BSB commander calls across the main command post. "How many blades do we have working out there currently?"

"Ma'am, two dozers. We have ten Soldiers from BSB organic working on the triple standard concertina wire. B-Company commander is charged with obstacle completion in engagement area Red. The headquarters and headquarters company commander is charged with obstacle completion in engagement area Blue. Both are approximately 60 percent complete at this time," the S-3 answers confidently.

The BSB commander looks over to the S-4, "When is the next time the dozers will need fuel?"

"Two hours ma'am," the S-4 replies.

Each BSB company commander is responsible for monitoring obstacle construction progress in their sector of the defense. Company commanders should communicate progress to the battalion main command post on an hourly basis. This enables the main command post to maintain an accurate obstacle overlay that can be shared with tenant and adjacent units.

Combined arms battalions have the combat power to fight company team engagement areas, but BSBs do not. Emplacing weapons systems to mass fire on specified TRPs requires the BSB S-3 section and protection integration cell to analyze and redistribute the available weapons systems.

REHEARSE

Once obstacle construction and weapons emplacement is complete, the BSB should rehearse actions in the engagement area. If the BSB is still employing a quick reaction force, they should move throughout the engagement area to replicate an enemy force. Rehearsing the timing of fire commands, triggers, and direct/indirect fire are critical to the success of the defense in depth.[5] Many viable plans have failed because of the lack of strenuous, realistic rehearsals down to the lowest level. Every echelon must understand their role, the assets at their disposal, and how to effective wield them.

CONCLUSION

The days of contracted security and relative safety are at an end. In large scale combat operations, it will take the entire brigade, using all available assets in concert, to support and sustain the fight. Sustainers at every echelon must change the prevalent mindset of the counterinsurgency era and train to defend beyond convoy operations. Defending a BSA in large scale combat operations

requires thinking beyond just the concertina wire perimeter. BSBs must develop defenses in depth using the process of engagement area development. BSB doctrine has been written to parallel the process combat arms units use, therefore, BSBs must train as such. Failure to do this will result in failure of the overall mission. The Army must (and can) do better.

Endnotes

1. ATP 3-90.1, *Armor and Mechanized Infantry Company Team*, 27 January 2016.

2. Ibid.

3. ATP 4-90, *Brigade Support Battalion,* 18 June 2020.

4. Ibid.

5. ATP 3-90.1, Ibid.

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CHAPTER 20

Brigade Support Area Defense Operations and Protection Cell

CPT Matthew T. Hughes

INTRODUCTION

The protection cell officer in charge (OIC) is integral to the base defense plan and execution. Most brigade support battalions (BSBs) have an S-3 staff officer or a headquarters and headquarters company (HHC) commander that could serve as the protection cell OIC. Each option has limitations, and this chapter describes considerations for that decision.

Because of its size, the BSB S-3 section is often plagued with overlapping roles and responsibilities. Defense of the BSA tends to take up a significant portion of their time. The S-3 rarely has the capacity to manage defensive operations at the level of detail needed for successful base defense while executing plans for support operations in the brigade combat team (BCT).

The HHC commander is responsible for life support to the BSB staff and providing oversight to the battalion's field feeding team. These two tasks do not typically require significant command oversight, but the protection cell could benefit from oversight. While the HHC commander does not have the typical responsibility of a battalion-level operation, commanders can mitigate this through wargaming and updates to the unit's tactical standard operating procedure (TACSOP).

Vignette

The first artillery rounds rock the BSB commander awake, and he struggles to slide his boots on while running to the main command post. The staff wrapped up a military decision-making process (MDMP) session just two hours ago, seeking to answer this question: How do we jump the brigade support area (BSA) while simultaneously pulling munitions from the division support area's ammunition transfer holding point, pushing fuel to two maneuver battalions, conducting fuel supply point distribution for the third, and receiving three days of rations from the combat sustainment support battalion, all within a 12- to 18-hour time period? The BSB commander opens the main command post door's tent flap to the side and looks for a situation report.

Seeing the BSB commander enter, the S-3 exclaims, "Sir, we are taking indirect fire!"

At the same time, the radio telephone operator (RTO) reports that he has had no contact with A or B-Company, but C-Medical Company is asking for guidance. The battle captain says she has determined that the BSB should go to 100 percent security, and the S-2 issues the report of dismounts to the south.

Aggravated, the commander exclaims, "Everyone calm down! Have we issued the order to go to 100 percent security? Do we have eyes on the dismounts to the south?"

The battle captain goes first, explaining that she directed the RTO to put out a net call for everyone to go to 100 percent security. The RTO confirms that the call went out, but reiterates that only C-Medical company has acknowledged receipt, and they are asking what 100 percent security means.

"That has to be a TACSOP addition when we get the time," the commander thinks to himself. He issues the guidance that 100 percent of fighting positions should be filled, and directs the S-3 to contact the brigade to request indirect fires support on the dismounts once proper coordination has been made. The S-3 gives the commander a confused look, and the commander sighs, "We should have rehearsed all of this."

Two hours later, after the quick reaction force has neutralized the enemy threat, leaders across the BSA exhale a sigh of relief that they made it through. However, these leaders still need to resume their regular operations, which they had halted because of the enemy contact.

Enemy contact disrupted the entire battalion's staff operations, and pulled the staff members responsible for planning into the current fight. Once they are there, it is extremely difficult to come back out.

PROTECTION CELL

The protection cell coordinates tasks and systems that preserve the force, enabling commanders to apply maximum combat power to mission accomplishment.[1] This includes protecting equipment, personnel, facilities, and information that is critical to accomplishing the battalion's mission.

Army Techniques Publication (ATP) 4-90, *Brigade Support Battalion*, 18 June 2020, outlines that the protection cell is usually comprised of, "…portions of the battalion's S-3 section, chemical, biological, radiological, and nuclear (CBRN), and preventive medicine personnel." The purpose of the cell is to synchronize and integrate the 12 primary protection tasks and four considerations.

Overall, the protection cell is the portion of the staff that is responsible for planning and executing base defense operations.

BASE DEFENSE OPERATIONS

The BSB commander is responsible for securing the base where its subordinate units are assigned. As the threat increases, the BSB commander may stop sustainment support to protect personnel and equipment. ATP 4-90 outlines the BSB and BCT commander requirement to discuss what risks are reasonable, and what risk mitigation measures they should implement based on requirements and priorities.

At its core, the BSA defense plan must include four components: detect the enemy, disrupt the enemy, destroy the enemy, and protect the base.

Detect the enemy. The first step to protecting the base is having a clear plan in place to detect the enemy. The battalion can establish listening and observation posts, active patrolling, setting up trip flares, or any combination of these. The element that detects enemy activity should immediately notify the main command post or protection cell of the enemy activity.[2]

Disrupt the enemy. After detection, leaders must structure the plan to disrupt an attack. This disruption allows time for a quick reaction force to mobilize, and enables for coordination of a combat force in the brigade's support area.

Destroy the enemy. Once identified and disrupted, the defense must be set up to destroy the enemy. Direct fire assets are the main platform the BSB has to neutralize enemy threats. The protection cell must coordinate with other brigade enablers to improve the battalion's ability to destroy the enemy.

Protect the base. To execute these tasks, the base must be protected. The BSA requires continuous protection from occupation until displacement. "Perimeter security is designed to incorporate layered defense in depth and integrate security elements including: cleared fields of fire, interlocking fires, a final protective line, barriers, surveillance, and access control."[3]

Coordinating this defense is a time consuming and tedious process and requires leadership attention at all levels.

FRAMING THE PROBLEM

BSB staff is unique in the sense that it is smaller in some cases, but larger in others. For example, it has a support operations section in addition to the standard staff sections that other battalions have, but the S-3 is smaller and does not have a sergeant major as the operations noncommissioned officer (NCO). The additional operations section enables the battalion to integrate its primary operation (providing sustainment support) into BCT operations.

BSA security is difficult to manage, and requires deliberate planning and leadership emphasis at all levels. The overall base defense plan is executed by the BSB S-3.[4] However, the BSB S-3 is only authorized three captains (the OIC, current operations officer, and plans officer) and four NCOs (the master sergeant operations NCO, sergeant first class operations NCO, CBRN NCO, and master driver trainer). Compare this to a maneuver battalion S-3 section, which is authorized one major, five captains, two lieutenants, and nine NCOs.

Typically, operations immerse the S-3 section leaders (e.g., logistic packages, Role 2 establishment, brigade level rehearsals, and battalion orders production). However, they should also focus on actions related to planning the battalion's next operation. The BSA can quickly grow to over a square kilometer. It is extremely difficult to manage that many tenants with competing requirements. Figure 20-1 shows the functional cells in the battalion main command post with the typical staff sections that are required to plan and execute them.

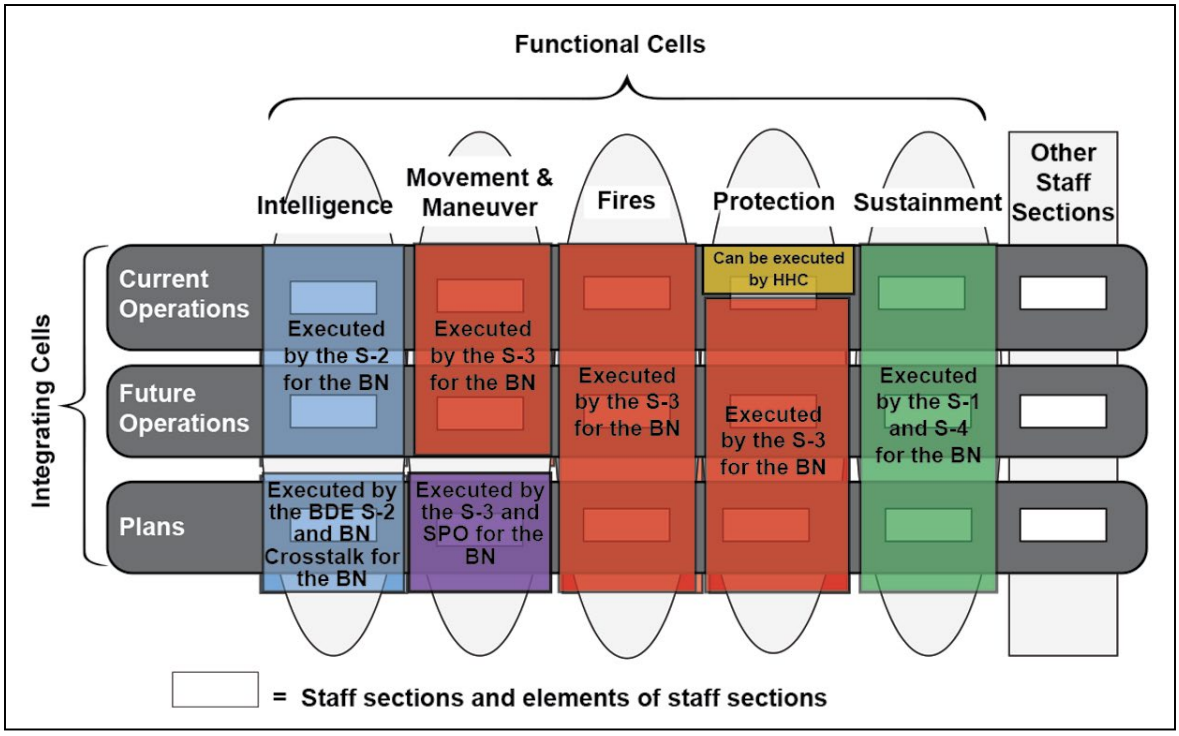

Figure 20-1. BSB Functional Cells in support of the BSB Operation[5]

The BSB S-3 section has a major role in staff operations, and must prioritize the tasks that have the largest impact on operations. The BSB does not have a dedicated fire support officer or automated systems to communicate with the brigade fires cell. Fires planning is relatively simple and involves establishing target reference points (TRPs) and no fire areas. This leaves the movement and maneuver and the protection cells as the focus.

The BSB does not have the capability to align one individual per cell when executing 24-hour operations. Members of the battalion staff must execute multiple roles simultaneously to ensure successful staff operations.

Movement and maneuver is the battalion's overall operation, and the success or failure of the BCT can hinge on how well the BSB plans, coordinates, and executes this warfighting function. Because of this, the role of lead planner and executer for protection (commonly referred to as base defense) is normally assigned to an excess lieutenant (in either the S-3 section or the HHC executive officer) and either the CBRN NCO or the master driver NCO in the battalion's S-3 section. While these individuals are competent and willing to execute this mission, they often lack the avenue and reach to influence other units within the BSA effectively.

While the lieutenant and a staff sergeant work tirelessly to execute the mission, the HHC command team is standing by managing the field feeding team and planning movements for the battalion staff for the next BSA displacement. These leaders are typically underutilized and can provide more value to the organization.

"A WAY" TO EXECUTE

Headquarters and Headquarters' Company Command Team

The HHC command team typically has the capacity to provide command and control for base defense operations. By putting a company in charge of this operation, the battalion gains invested leaders with a defined mission. When the battalion commander gives this task to a company commander, the personnel supporting the commander bring significant value to the operation. With the commander comes the first sergeant and supply sergeant. These leaders have relationships across the battalion and enough influence to resolve issues and move to points of friction quicker than a single lieutenant and staff sergeant.

A maneuver battalion typically assigns the commander responsible for the battalion's combat trains at the combat trains command post (CTCP) as the HHC commander. This commander is typically responsible for managing the battalion aid station, the maintenance collection point, and the logistics assets for emergency resupply. Inherently, they must plan, integrate, and execute local security of the CTCP. This leader manages multiple elements from different parts of the organization to enable the battalion's main effort. In the same way, the battalion utilizes the HHC commander to enable the BSB as the protection cell OIC, which better supports the BCT.

Additionally, the maneuver battalion establishes the commander as the one in charge of the operation. A commander can dialogue about risk with the battalion commander more readily than a staff officer or NCO (unless the staff officer is the S-3 OIC).

A drawback to this method is that a company does not have the inherent authority to reorganize and re-task companies on the BSA. When the BSB S-3 section handles base defense planning and execution, it allows the battalion to rapidly reorganize and re-task companies on the BSA.

Executing base defense with the HHC command team as the proponent requires buy-in from battalion and company leadership. It requires clearly defined expectations from each tenant on

the BSA. Commanders must define this before operations begin and determine the appropriate approval authority for changes. This can be done through home station training, training exercises without troops, and wargaming.

Tasking the HHC has costs. Company-level commanders must understand what the battalion expects of them and share understanding of how they plan to secure their sector of the BSA perimeter before execution. A memorandum of agreement or unit TACSOP can help outline both the limits of the HHC commander and how they are empowered to act on behalf of the battalion, as it relates to base defense.

This understanding should cover, at a minimum, the task organization changes for convoy protection platforms, entry control points, and sergeants of the guard. Managing these assets is critical to the overall protection plan.

Assigning the HHC command team as the base defense proponent will free up battalion staff to execute the MDMP, plan for future operations, and track the current battle.

Staff Officer

A staff officer (preferably from the S-3) brings a unique skill set as the protection cell OIC. This officer is involved in operations planning for the battalion and traditionally works in the battalion main command post. They are involved with the operations process to affect any needed changes as it relates to protection.

A drawback to having a staff officer serve in this capacity is the time commitment. The S-3 is a (comparatively) small staff section. Committing one of the officers from this section degrades the capability of continuously planning for future operations (movement and maneuver) or executing current operations battle tracking.

Overall, the decision is difficult, and commanders must consider the unique skill sets and talents that are present in their organization. Ensuring the battalion's main command post is able to battle track the situation while undergoing an attack is critical. Commanders must position the protection cell as close to the current operations section as possible. This enables the battalion commander to rapidly transition between current operations and future operations planning as the situation requires.

CONCLUSION

Sustainment units will always have to balance the risk between providing support to the brigade and protection to the BSA. An HHC commander can uniquely understand where the battalion commander is willing to assume risk, and work to mitigate the remaining risk while accomplishing the desired end state. Commanders must understand the personnel that are a part of their organization and assign roles to the individuals who best fulfill the requirements.

Endnotes

1. ATP 4-90, *Brigade Support Battalion*, 18 June 2020.

2. Ibid.

3. Ibid.

4. Ibid.

5. Ibid.

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CHAPTER 21

Supply Point Distribution from the Brigade Support Area

CPT Kyle Myers

Supply point distribution from the brigade support area (BSA) is a common distribution method when forward support companies (FSCs) locate near the BSA. Supply point distribution requires support units to move to a supply point to pick up supplies before moving out to resupply their supported unit. Often, supply points operate inefficiently, leading to increased times on station by the FSCs and the division sustainment support battalion (DSSB) conducting resupply of the BSA. Better supply point layouts and operations, along with appropriate security and communications, can lead to the continuous support of the brigade combat team (BCT) in large scale combat operations (LSCO). Ultimately, a supply point does the BCT no good if it cannot displace quickly from one BSA to the next to support the tempo and pace of the BCT.

LAYOUT CONSIDERATIONS

Supply points must be accessible to both the FSCs and the DSSB, in an area with good drainage and concealment, and near supply routes that can accommodate supply vehicles in all-weather conditions. Supply points should be easy to defend against ground attacks, using as few personnel and materials as possible. However, supply points must be large enough to handle the estimated volume of supplies and equipment while affording some dispersion of supplies to lessen the chance of enemy destruction. To prevent traffic congestion, separate entrances and exits from one-way traffic flow through supply points.

Knowledge of the terrain is critical to planning. Personnel with knowledge of supply point requirements should move with the quartering party to assess the selected space's supply point potential. These individuals should make sure the unit would be able to establish a secure perimeter, traffic flow routes, access control points (ACPs), and staging areas for supported units. They should also keep the displacement of the supply point in mind. Setting the bail bars facing outward from the supply point, with enough space in front of them, allows multiple pickups to occur at one time which prevents delays. The basic layout should not change from site to site unless it adversely affects the ability to process receipts and issues.

CLASS I OPERATIONS

Methods for ration break include unit pile and item pile, depending on the quantity and type of rations, the personnel, and the time available. Unit pile has all supplies for a unit put in one marked pile, and uses unit personnel to load the supplies on their vehicles under supply point personnel supervision. Unit pile is the preferred method when no other break is needed. Item pile is the separation of items into piles by type. The requesting unit stops at each pile and picks up authorized amounts under supply point personnel supervision. Item pile reduces supply point personnel handling the supplies, but leads to longer loading times, as FSC personnel have to move to each pile to collect their allotment.

The ideal situation in LSCO is for unit rations to be broken down at the supply support activity (SSA) into unit-configured loads, and put into the Multi-Temperature Refrigerated Container System (MTRCS) on Container Roll-in/Out Platforms (CROPs) while they are still in the division support area (DSA). This situation reduces the turnaround time of Class I at the BSA, as loads

are ready for movement to each field kitchen site without further break needed. The BCT food advisor or senior culinary management noncommissioned officer should ensure that unit loads are correct before moving from the DSA to the BSA. Then the FSC can conduct a one for one swap of the MTRCS and CROP at the BSA Class I point, reducing time on station and the waste of any perishables or ice that would need to be cross-loaded at the supply point. Figure 21-1 shows a notional layout for a Class I point utilizing the unit pile or item pile methods.

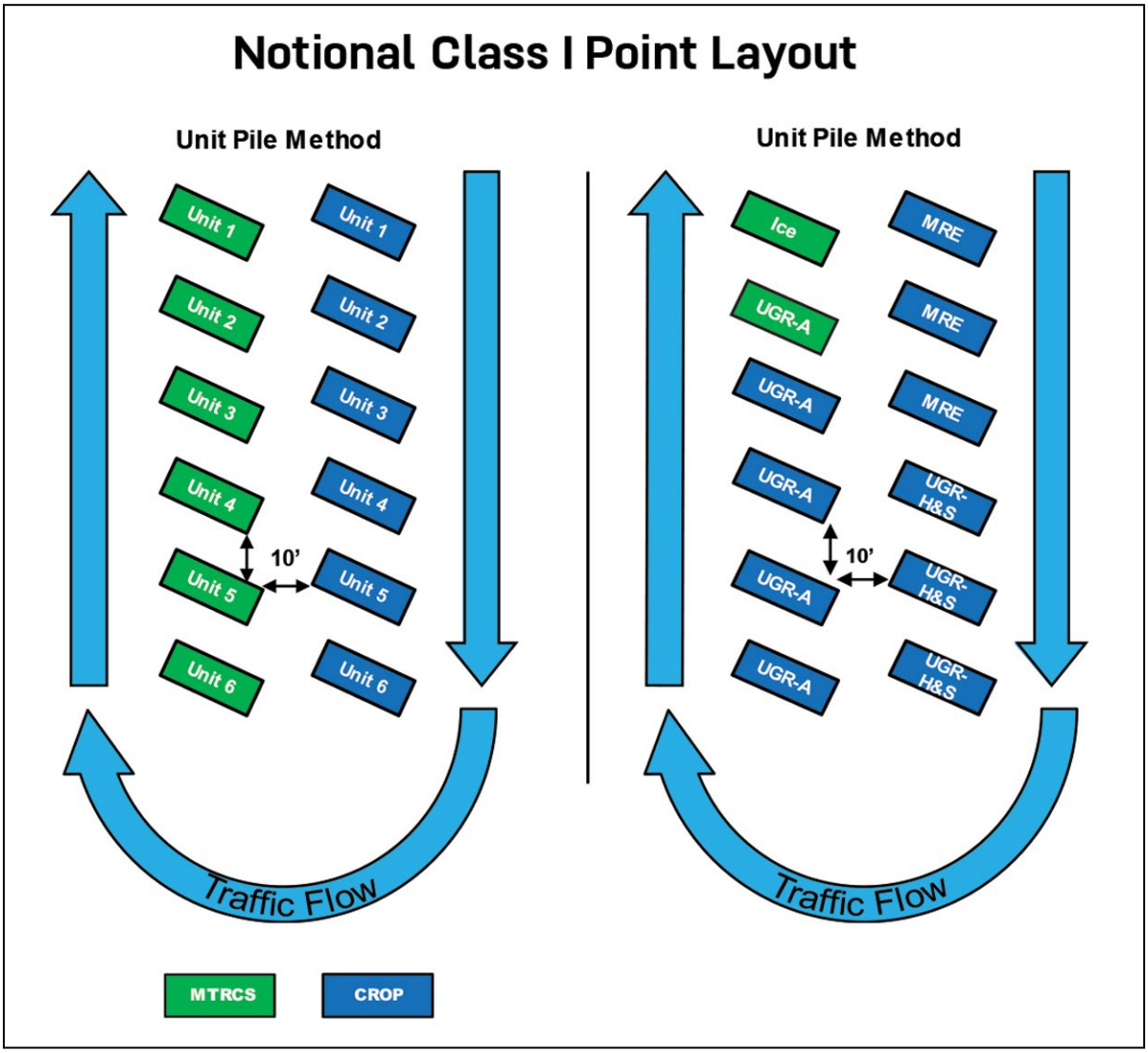

Figure 21-1. Notional Class I Point Layout in Unit and Item Pile Methods

GENERAL SUPPLY OPERATIONS

The SSA is the supply point for the BCT when it comes to general supplies, and must operate 24-hours a day during LSCO. The SSA consists of stock control, receiving, storage, issue, shipping, and turn-in sections. Stock control is critical to effective SSA operations, as they assist the accountable officer in tracking shipments and following-up with supported unit requests. The stock control expandable container should be in a central location to facilitate proper management of the SSA. The receiving section processes the receipt and moves new stock to either storage, issue, or shipping sections. The storage section pulls customer issues and places them in customer

bins or the shipping section while managing the common authorized stockage list (CASL). Putting fast-moving items closer to the issue point reduces time spent pulling items and moving them for issue to units. The issue section issues items to supported units, while the shipping section packs and crates items and coordinates transportation for shipment forward or retrograde. Finally, the turn-in section receives turn-in items from supported units for retrograde.

An SSA's specific CASL depends on whether it is supporting an armored, Stryker, or infantry BCT. An armored BCT will have 18 Balance on Hand (BOH) Field Pack-up Units (FPUs) and 35 CROPs (53 twenty-foot equivalent units [TEUs]). A Stryker BCT will have 15 BOH FPUs and 17 CROPs (32 TEUs), and an infantry BCT will have eight BOH FPUs and eight CROPs (16 TEUs). The space an infantry BCT CASL will take up is just under one-third of an armored BCT, and a Stryker BCT will take up slightly less than two-thirds of an armored BCT. Figure 21-2 shows a notional layout for an SSA supporting an armored BCT.

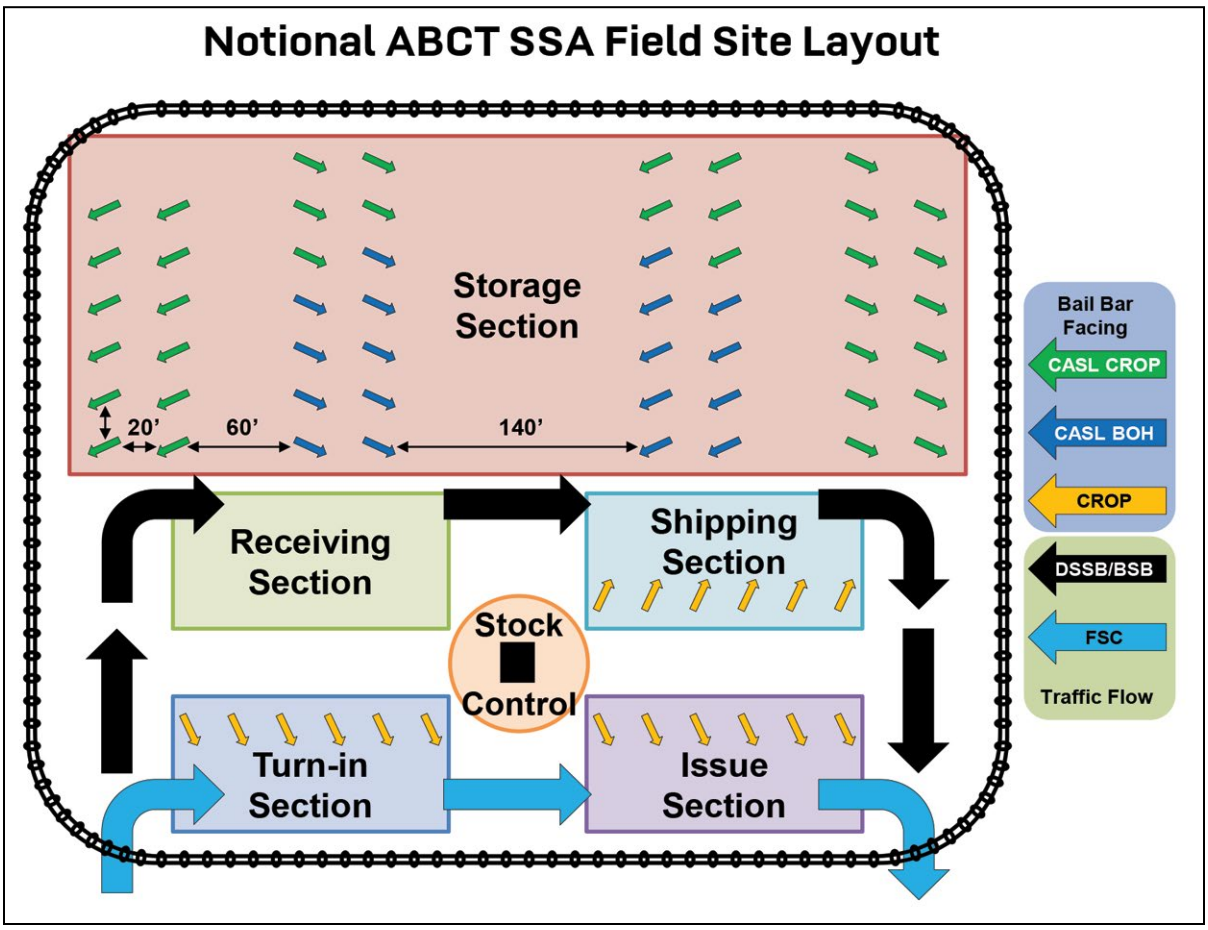

Figure 21-2. Notional SSA Layout for an Armored BCT

CLASS III OPERATIONS

When parked at a supply point, tank vehicles should be at least 25 feet from the centerlines of adjacent vehicles, or at least 10 feet from parked vehicles (whichever is greater). Tank vehicles should be at least 100 feet from the perimeter, if space is available. If space is limited, it should be 50 feet. Tank vehicles should not be closer than 100 feet from sleep areas or inhabited facilities. When feasible, side protection, such as a barricade of earth or sandbags, should be provided to

protect from possible blasts. Otherwise, more dispersion reduces the impact of loss from enemy attacks. Leaving enough space between rows of tank vehicles allows them to move out quickly in an emergency. When possible, petroleum operations should be conducted on level ground on all vehicles and equipment before any refueling operations begin.

Personnel at the Class III supply point should have specific tasks, but their assignments should be flexible. For example, when the supply point is not busy, Soldiers can improve the camouflage and concealment of the area, check safety equipment for serviceability, or conduct preventive maintenance checks and services on equipment within the supply point. Figure 22-3 shows a notional layout for a Class III point supporting an armored BCT.

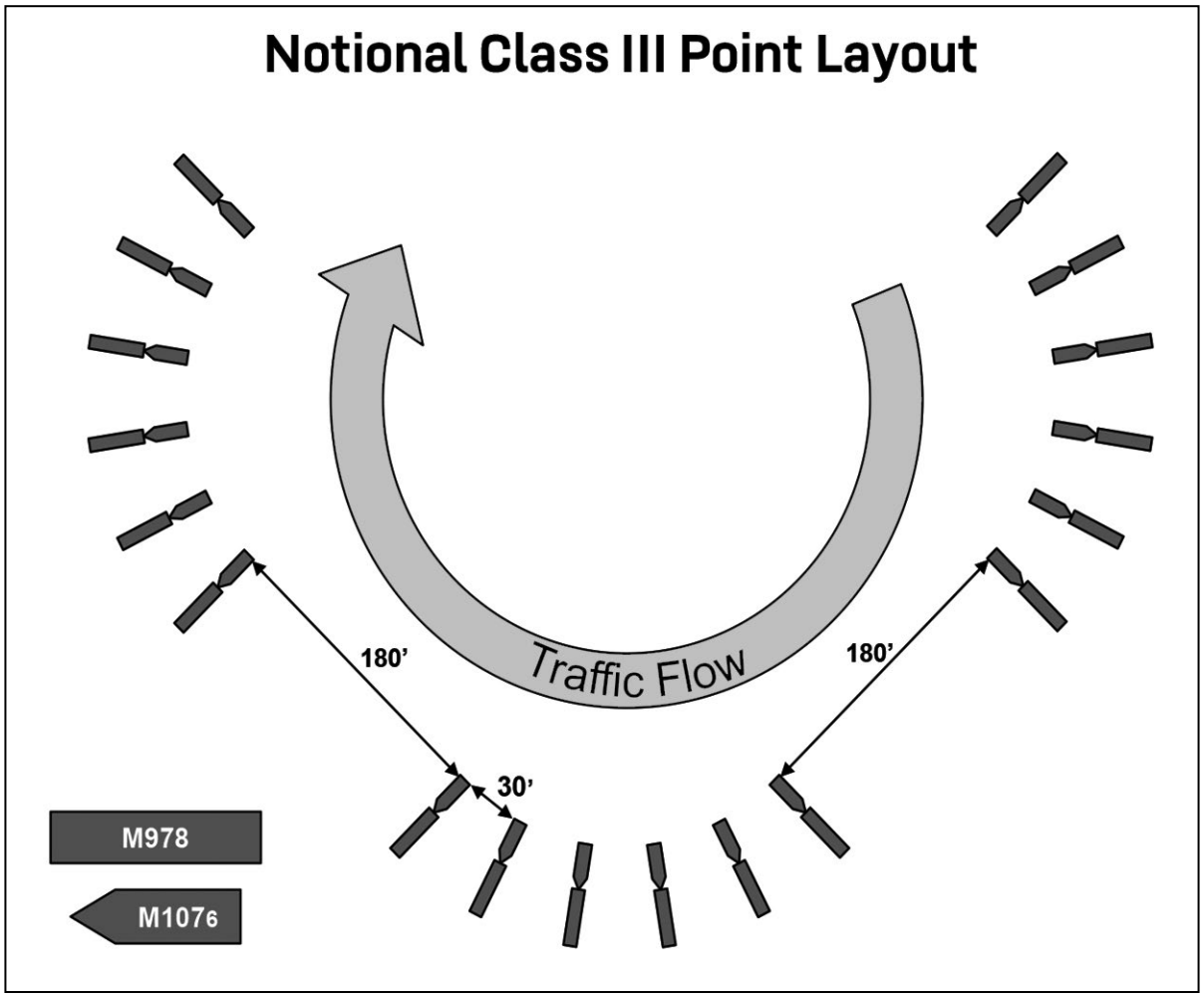

Figure 21-3. Notional Class III Layout for an Armored BCT

CLASS V OPERATIONS

In LSCO, the ammunition transfer point is a temporary operation located in the BSA that facilitates rapid receipt and issue of ammunition to the users. Ammunition transfer point personnel reconfigure loads to meet mission requirements on a limited basis, only in the BSA. Combat configured loads from echelons above brigade ammunition supply points (ASPs) are typically issued as is. When conducting supply point operations, the FSC arrives at the ammunition transfer point to pick up ammunition, drop off empty or partially empty ammunition CROPs, and receive fully loaded

CROPs. If a returning CROP is partially empty and the returned ammunition is still required, modular ammunition transfer point personnel may consolidate the ammunition to make full loads for issue within the BCT. Any empty CROPs are shipped back to the ASP to create new ammunition sustainment loads.

SECURITY

When feasible, using triple-strand concertina wire helps define supply point perimeters, and using ACPs prevents unauthorized access and maximizes vehicular traffic flow. ACPs should have guard personnel that are capable of controlling access to supply points. Security patrols can check on the perimeter's condition daily to ensure that no one has tampered with or penetrated the wire. Supply point personnel should limit actual storage area access to only authorized personnel on duty and inspectors. Fighting positions should be included in the layout of supply points and as part of the unit's overall defensive plan.

COMMUNICATIONS

Supply points must maintain situational awareness with higher headquarters, FSCs, and the DSSB distribution units via radio and the Joint Battle Command-Platform. This allows the supply points to know when units are inbound to receive/deliver supplies or if the BSA is under attack. Supply points can also communicate with these units to inform them of their own situation, especially their higher headquarters, if dispersed over a base cluster. Internal communication within the supply point is essential to reducing time wasted waiting for personnel to relay messages across a supply point. While not authorized on a unit's modified table of organization and equipment, the Multiband Inter/Intra Team Radio is ideal for internal communications within supply points (when dismounted from vehicles).

Enterprise resource planning technology requires the establishment of satellite communications as soon as possible when moving to a new site. The very small aperture terminal (VSAT), when used in concert with the Combat Service Support Automated Information Systems Interface (CAISI), ensures that the SSA and ammunition transfer point can connect with their sources of supply, another supply activity, and higher headquarters via the Secure File Transfer Protocol. The Sustainment Automation Support Management Office (SASMO) ensure that satellite communication capabilities are maintained. VSAT and CAISI supply personnel must know the support capabilities of the SASMO and understand how to leverage these capabilities for effective day-to-day operations. Plans for displacement should include sending a VSAT forward to establish communications at the new site before taking down the VSAT at the old site.

DISPLACEMENT

Movement operations depend on the tactical requirements for uninterrupted supply support. If the BCT requires continued support, supply points need to be echeloned forward, and the new site should be established before the old site closes. Ideally, supply points should maintain supply levels that can remain uploaded on organic equipment to facilitate rapid displacement. Devising a transportation allocation plan can mitigate wasted time if drivers understand which load they are required to pick up for displacement. Depending on the maneuver force's pace, BSBs should prepare supply points to establish smaller issue locations every 24- to 48-hours in LSCO.

CONCLUSION

Supply points must be organized efficiently to increase their effectiveness and fill the BSA supply point distribution requirements. The optimization of supply point layout and operations is critical for reducing time on station at the BSA by FSCs and the DSSB, and reducing preparation times for BSB distribution assets. Supply points in the BSA must have the appropriate security and communications to continuously support the BCT. Supply points need to facilitate quick displacements to maintain tempo and provide responsiveness to the BCT.

CHAPTER 22

Modular System Exchange

CPT Kyle Myers

During large scale combat operations (LSCO), the continuous forward distribution of supplies to the warfighter crucially extends the operational reach and prolongs the maneuver force's endurance. Using a modular system exchange reduces distribution asset's time on station when conducting resupply operations from one sustainment echelon to another. Resupply operations modular systems consist of the Container Roll-in/Out Platform (CROP), Multi-Temperature Refrigerated Container System (MTRCS), Load Handling System (LHS) Compatible Water Tank Rack (Hippo), and Modular Fuel System (MFS) Tank Rack Modules (TRMs).

MODULAR SYSTEM INFORMATION

The CROP is a demountable cargo-carrying platform with 32,450-pound payload capacity designed to load on the Palletized Load System (PLS), PLS trailer, Heavy Expanded Mobility Tactical Truck (HEMTT) LHS, and also inside a 20 foot International Standards Organization container.[1] The CROP is transported from the continental U.S. to the corps support area (CSA) where it is then unloaded and transported by the PLS down to the brigade support area (BSA), and finally on a HEMTT LHS from the BSA to the maneuver force. Three CROPs per truck and trailer are allocated for each PLS, HEMTT LHS, and PLS trailer to allow one to be at the shipping end, one at the receiving end, and one in transit as part of the flat-rack exchange.

The MTRCS is a refrigerated container capable of distributing and storing perishable and semi-perishable cargo while simultaneously maintaining two different temperature ranges. The insulated container portion of the MTRCS maintains temperature for up to 12-hours without running the refrigeration unit.[2] The MTRCS design allows for shipping up to 14 fully loaded pallets with a maximum cargo weight of 12,600-pounds, when transported using a HEMTT LHS, and 22,850-pounds with a PLS.[3] When transported in conjunction with a CROP, a MTRCS can support perishable and semi-perishable operational rations for up to 800 personnel for three days. Each field feeding element is allocated one MTRCS with a containerized kitchen or mobile kitchen trailer. The bulk of MTRCS allocation is either supplied to platoons with subsistence missions in the division support area (DSA) or provided to support modular system exchange forward.

The Hippo is a mobile system used to perform bulk and retail potable water distribution and storage. It consists of a 2,000-gallon capacity water tank rack with pump, filling station, hose reel, and bulk suction and discharge hoses.[4] The Hippo is employed throughout the battlefield, providing water distribution directly from water purification sites in either the CSA or DSA to supported maneuver forces via modular system exchange between echelons.

TRMs provide a 2,500-gallon capacity for fuel distribution and storage at any location, regardless of construction equipment or materials handling equipment availability.[5] TRMs are primarily transported onto the battlefield on a PLS trailer towed by a HEMTT Tanker, but can also be transported by a PLS or HEMTT LHS for bulk fuel line haul throughout the theater. Each TRM contains a non-collapsible hose to connect to the HEMTT Tanker for bulk transfer. The M107 and M107A1 can conduct retail operations via gravity flow to issue fuel when on a PLS trailer. Only the M107 can conduct retail operations on the ground via its 22 gallons per minute pump and an external power source (either a 24 volt direct current generator or a vehicle). The TRM can support refuel-on-the-move missions when set up with the MFS Pump Rack Module of the composite supply company.

MODULAR SYSTEM EXCHANGE OPERATIONS

Army Techniques Publication (ATP) 4-90, *Brigade Support Battalion*, 18 June 2020, outlines modular system exchange as a resupply technique that logisticians can use when echeloning sustainment capabilities. When units perform these exchanges during LSCO, the serial number accountability of CROPs, MTRCSs, Hippos, and TRMs is not a limiting factor. The expectation is that units are maintaining accountability. Utilizing modular system exchange within the distribution network allows sustainment units to maintain tempo, support flexibility, and provide responsiveness during operations.

Modular exchange systems going from the DSA to the unit trains start with the division sustainment support battalion (DSSB) transporting modular systems to the brigade support battalion (BSB). When the systems have arrived at the BSA, the BSB distribution company receives them, transports them, and delivers them to the forward support companies (FSCs) not located within the BSA. The BSB distribution company then retrieves any empty or partially filled modular systems from the FSC and returns them to the BSA. When the DSSB transports another set of modular systems from the DSA to the BSA, they retrieve the empty or partially filled systems from the BSB. This constant exchange of modular systems continues as long as needed to support the maneuver force. Figure 22-1 depicts this example of modular system exchange operations from the DSA to the FSCs with three configured loads.

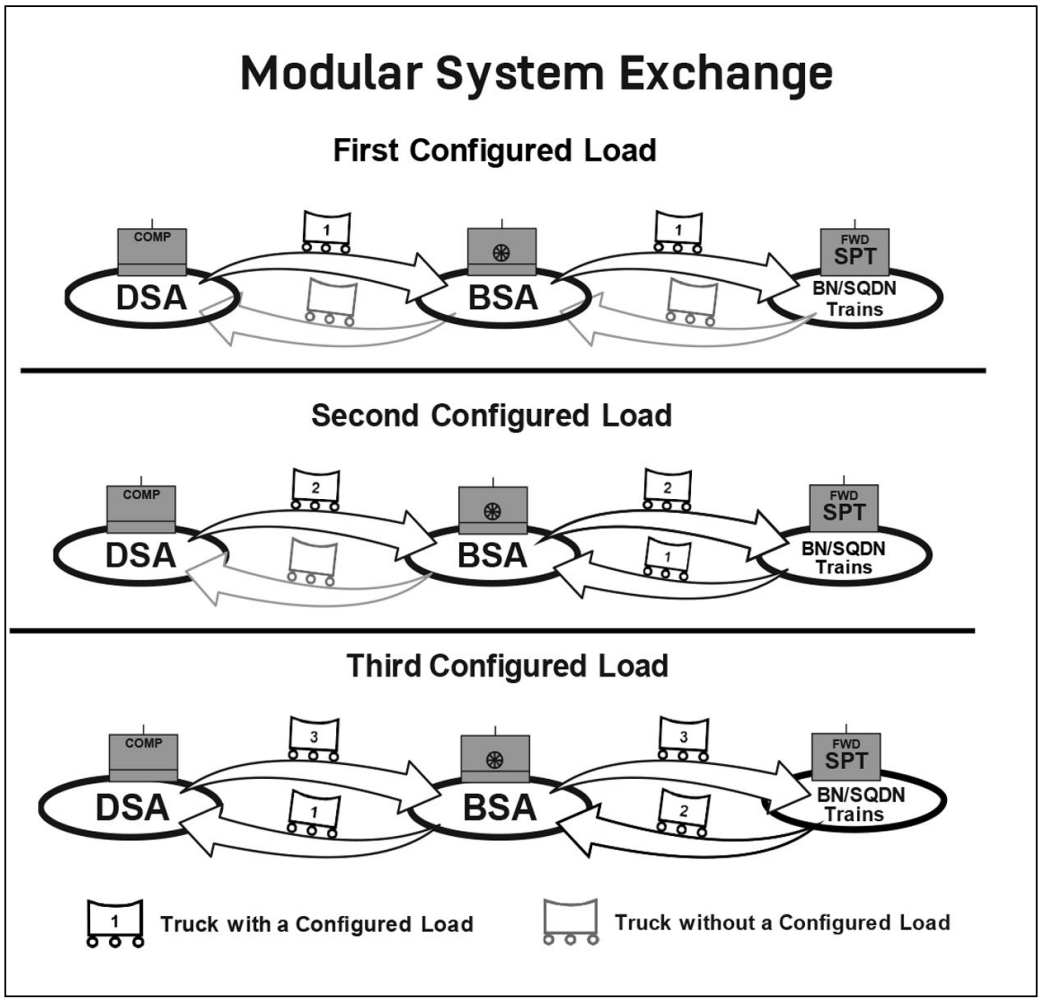

Figure 22-1. Commodity Exchange Operations

MODULAR SYSTEM EXCHANGE MANAGEMENT

In a theater of operations, the theater support command distribution management center (DMC) is responsible for managing all modular systems.[6] The DMC establishes a control office that sets quantities for each echelon based on requirements. The DMC manages the on-hand balances at each echelon with daily reports from movement managers on the status, condition, and location of systems. Before using the Global Combat Support System (GCSS)-Army, the accounting policy for modular systems was to transfer these systems to a separate property book account maintained by the Class VII accountable officer.[7] Within GCSS-Army, units can laterally transfer these items or they can temporarily loan them (using the temporary loan feature in GCSS-Army) to a consolidating activity designated by the senior logistician. Once centrally pooled, the modular systems are not required to be hand receipted further, allowing modular system exchange to occur throughout the theater. If laterally transferred, the consolidating activity is required to replace in kind from the pool of assets on-hand when units redeploy from the theater. If using a temporary loan, the donor unit would have to work with the control office and wait for their exact serial number to come out of circulation to collect it from the consolidating activity when redeploying. Either way, commanders can focus on supporting the warfighter and not chasing down individual serial numbers.

A brigade combat team (BCT) could employ the temporary loan feature in GCSS-Army during field-training exercises (FTXs) or training at combat training centers (CTCs). The BCT commander can direct that these systems be loaned to the BSB distribution company as the consolidating activity, allowing FSCs to focus on supporting their battalion or squadron during the FTX or CTC rotation. The field maintenance company would also be able to conduct maintenance on these systems within the BSA. The BSB transportation operations managers in the support operations (SPO) section would be able to track each system's status, condition, and location within the brigade area with daily reports from the BSB distribution company and FSCs. This approach would prevent stacking and transporting empty CROPs at forward echelons and wasting time transferring supplies from one system to another. If BSB and FSC distribution vehicles only carried priority commodities while conducting one-for-one swaps, time on station would be decreased. The BSB could then establish a modular system control point after the FTX or CTC rotation to consolidate those systems and allow owning units to pick up their correct ones.

Another method of conducting modular system exchange management while not in theater is to codify a color code marking system for equipment in the brigade's tactical standard operating procedure. This system's simple method utilizes the seven-traditional colors for the rainbow (red, orange, yellow, green, blue, indigo, and violet) and marks near the hooks of the modular exchange systems with either tape or paint. Using a color code marking system identifies the modular exchange system's unit affiliation when conducting exchanges between units, and allows the FSC to swap its equipment back-and-forth with the BSB one-for-one. The color code marking system does have limitations when it comes to scaling, and is best utilized in brigade and below formations.

CONCLUSION

Modular exchange systems enable continuous distribution of essential supplies forward to the warfighter during LSCO, but require commanders to accept risk for the systems themselves. With proper management, commanders can mitigate that risk in a theater of operations or at home station. Using both methods to conduct modular system exchange management while not in a theater provides the optimal solution for maintaining accountability and tempo, supporting flexibility,

and providing responsiveness to the BCT. Commanders should identify their modular exchange systems, and the field maintenance company should conduct maintenance on down systems in the BSA. No empty systems would waste space in the battalion and squadron areas while allowing one-for-one exchanges to take place as intended.

Endnotes

1. Technical Manual (TM) 9-3990-260-14&P, *Operators, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Container Roll-In/Out Platform (CROP) Model M3 and Model M3A1*, 27 July 2001.

2. TM 10-8145-222-10, *Technical Manual Operator Manual for Multi-Temperature Refrigerated Container System MTRCS01 and MTRCS02*, 15 April 2016.

3. Ibid.

4. TM 10-5430-244-10, *Operator's Manual for Load Handling System Compatible Water Tank Rack M105*, 10 August 2012.

5. TM 10-4930-370-10, *Operator Manual for Modular Fuel System Tank Rack Module with Stand-Alone Retail Capability M107*, 16 September 2015.

6. Army Regulation (AR) 56-4, *Distribution of Materiel and Distribution Platform Management,* 17 September 2014.

7. AR 710-2, *Supply Policy Below the National Level*, 28 March 2008.

CHAPTER 23

Establish and Provide Sustainment Using a Forward Logistics Element

COL Brent Coryell and MAJ Dennis Williams II

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019, with updates by MAJ Adam Phearsdorf)

OBSERVATION

Units are not advantageously employing forward logistics elements (FLEs) because of their inability to forecast, plan, and synchronize activities between supported units, the brigade support battalion (BSB), and the combat sustainment support battalion (CSSB).

DISCUSSION

Poor forecasts make it difficult for sustainment planners to develop FLE composition, which leads to allocating an arbitrary percentage of the BSB's capability. Most units send the support operations (SPO) officer to perform the initial set up and command of the FLE and then replace that person with either the SPO deputy or an officer in charge (OIC) from A-Company BSB. There is often more than one officer of the same rank at the FLE, and it can be unclear who is in charge. Many units fail to ensure communication assets are properly resourced at the FLE. For example, some FLEs will not have Joint Capabilities Release (JCR) and rely on frequency modulation (FM) or very small aperture terminal to communicate with the BSB SPO officer. Units often do not clearly identify which supported units will use the FLE, resulting in the FLE becoming a retail point for anyone in the area. The supported battalions, BSB, and CSSB are often unclear on the displacement criteria to establish an FLE or how long it will remain in place, causing units to miss linkup or return to the brigade support area (BSA). The FLE location is often chosen without knowing where future combat trains command post (CTCP) locations will be, which results in a less than an optimal location for the FLE. Weapon platforms are usually limited in the BSB, forcing commanders to decide on whether to assume risk at the BSA or the FLE.

The following is a list of considerations for FLE planning:

- Future operations (duration)
- Future sites for BSA or Leapfrog
- Mission command until BSA jumps
- Task and purpose
- Officer and noncommissioned OIC
- Communication (JCR/FM)
- Supplies and services (commodities)
- Resupply of the FLE
- Medical assets (Role 1/2, mortuary affairs collection points, patient holding area)
- Security

The FLE operates within a forward logistics base or support area. The FLE represents the BSB commander's ability to weigh operational effort by drawing on sustainment assets across the brigade combat team (BCT). Sustainment planners typically plan an FLE when the BCT is moving forward but it is not yet advantageous to relocate the BSA. The FLE is often used as a location for the BSA to jump to or beyond. The FLE shortens the line of communications (LOC) between the forward maneuver CTCPs and supplies located at the BSA. This occurs because the designated forward support company's distribution platoons conduct supply point distribution from the FLE via the BSA. Sustainment planners realize that since the logistics LOC has exceeded the BSB's ability to conduct resupply, the medical LOC has also been exceeded, reducing the maneuver's operational reach. Most units push the Role 2 and all of its accompaniments, including patient holding areas and mortuary affairs collection points within the FLE.

RECOMMENDATION

> "The BSB commander task organizes a FLE to support high tempo operations that exceed the capacity of existing echelonment of sustainment operation, or to temporarily support the brigade when the BSB displaces to a new location. The intent for employing an FLE is to minimize tactical pauses to the plan and enable the commander's momentum by shortening the lines of communication."
>
> Army Techniques Publication, (ATP) 4-90, *Brigade Support Battalion*, 18 June 2020

Sustainment planners should consider several factors when planning an FLE. These include future operations, mission command, commodities and services, medical assets, communication requirements, operational boundaries, enemy artillery ranges, extended LOCs by time/distance, and security. Additionally, sustainment planners should determine the task and purpose of the FLE, who the FLE supports, and if/when the BSB will jump to the FLE or beyond. Mission command of the FLE is critical during BSA jumps. The BSB commander and staff should identify the OIC of the FLE. It has been observed that the deputy SPO officer or A-Company BSB commander are good selections as FLE OICs. The mission is typically not the best place for the SPO officer; however, the commander may want a field grade officer on the ground.

Determine how units will communicate. The JCR has proven to be the most effective and consistent platform. A hasty command center with a JCR can be established from the OIC's vehicle and monitored 24-hours a day. With the decision to employ an FLE, sustainment planners need to consider location, the amount of commodities needed, and the duration. These factors also allow Soldiers to plan resupply operations through the BSB or echelons above brigade. Understand future CTCP locations before deciding the location of the FLE to ensure appropriate proximity between units. One major decision point is whether to push Role 2 and the components that accompany it forward with the FLE. When pushing Role 2 forward with the FLE consider the security assets required to conduct ambulance exchange points (AXPs), the location of the BCT medical supply officer for Class VIII resupply, and the Non-Secure Internet Protocol Router Network connectivity (Defense Medical Logistics Standard Support Customer Assistance Module, Medical Communications for Combat Casualty Care, and Armed Forces Health Longitudinal Technology Application). Units also need to consider pushing the mortuary affairs collection points and patient holding areas with the Role 2 to conduct reconstitution operations.

The FLE must be able to secure itself. Security must be planned and include site selection and weapon platforms. The FLE OIC needs to establish sectors of fire and hasty battle positions for the Soldiers. If the FLE intends to conduct a logistics release point or execute AXPs, additional security is required.

CHAPTER 24

Conducting Effective Resupply Using a Logistics Release Point

COL Brent Coryell and MAJ Dennis Williams II

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019, with updates by CPT Christopher Mauldin)

Logistics release points (LRPs) are designed to allow support units to meet at a designated place and time to conduct a rapid exchange of modular systems (see Figure 24-1). For example, dropping off a flat rack of Class IX in exchange for an empty flat rack.

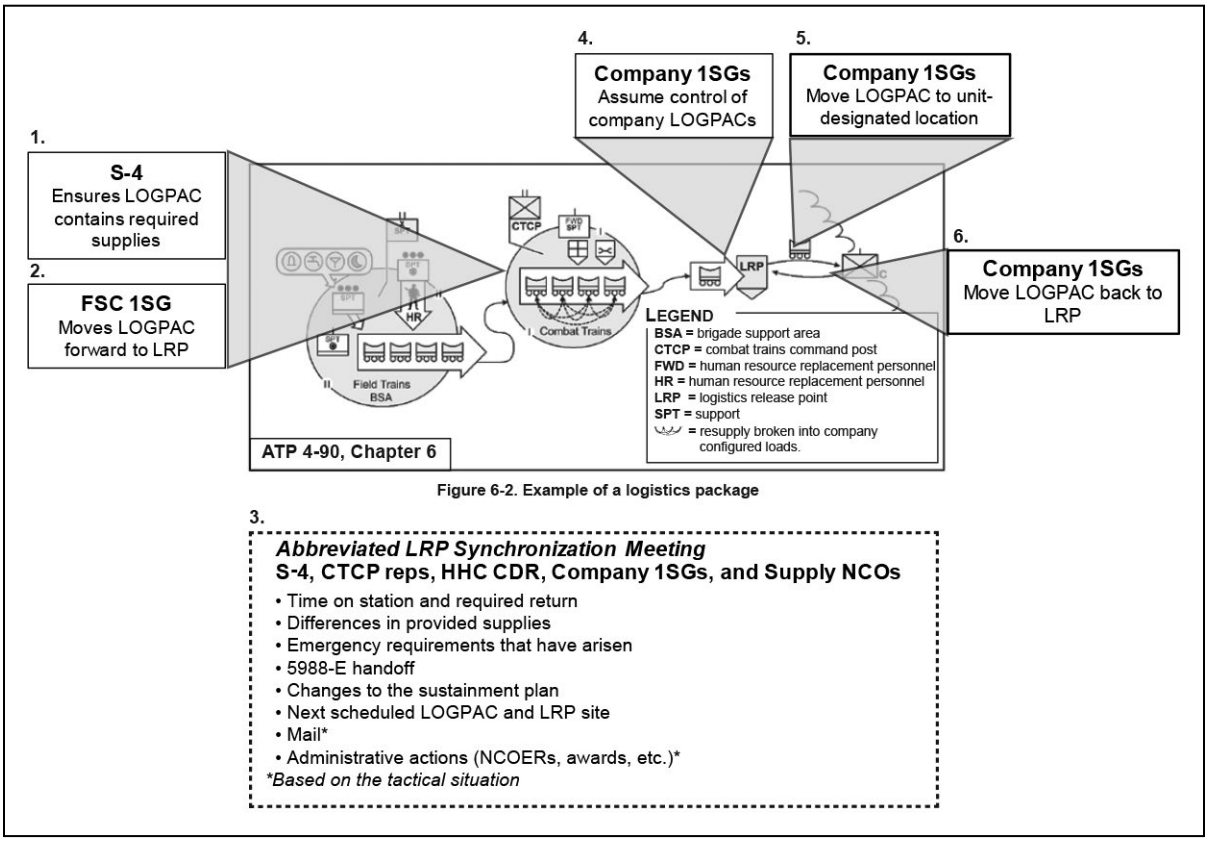

Figure 24-1. Example LRP Process

OBSERVATION

LRPs are a very effective means of unit distribution, but most brigade combat teams need practice executing them. Many units practice supply point distribution at home station, but rarely train on LRP operations. Often, the A-companies of the brigade support battalion (BSB) and the forward support companies (FSCs) are not synchronized, which leads to failure linking up at the right location at the right time. The FSCs must resupply the maneuver units to empty their assets before A-Company BSB resupplies them. Night operations are also a challenge for units conducting

LRPs, as they are not confident in night land navigation or the transfer of supplies in limited visibility. Ineffective logistics synchronization meetings also contribute to FSCs misunderstanding the lift assets required at the LRP, forcing them to return later or transfer incomplete supplies. Hand receipt holders are anxious about property accountability, which leads to trans-loading supplies between assets instead of exchanging load handling system compatible water tank racks or Hippos, Modular Fuel Systems (MFSs), and flat racks, as doctrinally designed. The trans-load of supplies causes an increased turn-around time. For example, it takes approximately one hour for a Hippo to trans-load.

DISCUSSION

LRP operations are a good way to shorten lines of communication in support of one or more battalions. Utilizing modular distribution systems for increased velocity shortens the time on ground. The A-Company BSB transportation platoon is often underused, and the FSC distribution platoons are often overused because of over-reliance on supply point distribution. The goal is for all distribution assets and Soldier times to be equally distributed. It has been assessed that more than two logistics package missions in a 24-hour period wears down distribution platoons.

A-Company BSB and FSC distribution platoons must train on LRP operations using the exchange of flat racks and modular systems during home station exercises and combat training center rotations. Although the distances during these training events may not seem to warrant an LRP, practice and repetition is the only way to achieve proficiency.

RECOMMENDATION

Plan for A-Company BSB to conduct two LRPs a day, alternating support between different units so that every few days each FSC gets a distance break. Use Hippos, MFSs, and flat racks as designed for efficient and expedited transfer of supplies. Drop the empty cargo containers, and pick up the full. The brigade combat team, battalion, and company commanders must underwrite system exchange and manage the risk of loss or damage. The odds are minimal that a system or flat rack will get lost. Damage to a system is often the main concern, and can be mitigated by training and holding operators accountable.

CHAPTER 25

Preserving Combat Power

CPT Matthew Hughes, CW3 Sorepa Thomas, CW4 Archie Morgan, and MAJ Jerod Farkas

The main effort of a brigade combat team (BCT) is to seize the objective. Brigade staff recognize the conditions that signal the need to transition into defensive operations, and the operations officer recommends that the commander issue the order and make the transition. Units begin to initiate movement to consolidate non-mission capable equipment and regenerate combat power. As the BCT consolidates and begins preparing for obstacle emplacement, leaders work to identify and prioritize the recovery and repair of non-mission capable equipment across the area of operations. Once identified, leaders must set conditions to maximize potential and fix equipment as far forward as possible. The Class IX repair parts within the BCT's common authorized stockage list (CASL) and the battalions' shop stock list (SSL) are the number one enablers for this effort.

Understanding how the brigade can influence and manage the CASL and SSL is critical to ensuring the brigade is postured to maximize Class IX availability. This is done by utilizing governing policies, knowing how BCTs influence their CASL, utilizing tools to monitor SSL performance, improving SSL fill rates, and considering ways to array SSLs in the BCT's area of operations during large scale combat operations.

ARMY REGULATION 710-2: *SUPPLY POLICY BELOW THE NATIONAL LEVEL*

The management of authorized stockage lists (ASLs) and SSLs are directed in Army Regulation (AR) 710-2, *Supply Policy below the National Leve*l, 28 March 2008. Both ASLs and SSLs have supplementary guidance for implementation, which can be found in the Headquarters, Department of the Army (HQDA) Execute Order (EXORD) 193-17 and U.S. Army Forces Command (FORSCOM) guidance. To support interim shop stock implementation and an updated SSL strategy, include quantity of lines and implement optimized SSL.

AR 710-2 prescribes policy for supply operations below the national level. As it relates to the ASL, AR 710-2 directs an annual review with nine demands required to add demand supported lines, and three demands required to retain demand supported lines. Additionally, non-demand supported lines can be implemented as command directed lines for up to five percent (of lines) of the total ASL. This policy further establishes the requirement for the ASL to store five days of supply in garrison and a 15-day supply when deployed. Furthermore, the unit must be able to move the ASL within a single lift for maintenance of significant parts, or essential code-C items. Each unit inventories 100 percent of its ASL annually (wall-to-wall), 100 percent of sensitive items monthly, and a list of selected items each month.

AR 710-2 also directs a semi-annual review of the SSL, adding three demands and retaining one demand. This can be 10 percent (of lines) command directed and 15 days of supply that can be moved in a single lift. Additionally, AR 710-2 directs SSLs be inventoried every 90-days, with excess being turned in within 10-days.

BRIGADE COMBAT TEAM COMMON AUTHORIZED STOCKAGE LIST CHANGE INPUTS

The BCT CASL range is between 2,000 and 4,500 lines and is standardized based on unit type: armored BCT, Stryker BCT, and infantry BCT. Army Materiel Command (AMC) purchases the Class IX using the Army Working Capital Fund and owns the parts stored forward within BCTs until purchased with unit funds and issued to unit bins. BCTs are responsible for managing the receipt, storage, and issue of Class IX in line with the CASL stockage listing. The centralized planning of CASLs alleviated the BCT's responsibility to manage the performance of their individually managed ASL, ultimately increasing Army wide efficiencies and readiness. However, BCTs can still affect the outcome of the lines being stocked in their CASL.

BCTs are able to contribute to the annual CASL review performed by AMC and the HQDA G-44 (S), providing feedback before the final adjustment decisions are made. There is a two week period each year when BCTs receive the CASL review file to run their own internal review board. The brigade review board should include, at minimum, the brigade support operations (SPO) officer and materiel officer, the supply support activity (SSA) accountable officer, and each battalion maintenance technician. The brigade executive officer, brigade support battalion commander, and any other invested agents are welcome to attend and provide input. The board evaluates the review file and submits feedback regarding any disputed add, delete, or retain lines. The board can also submit lines for addition to the CASL that are not in the review file, based on steady and sufficient demand over a 24-month period. The feedback has to include justification regarding space availability, cost, and contribution to readiness for consideration.

Outside of the annual review period, brigades can make recommendations to AMC and HQDA G-44 (S) for adjustments. The unit must fill out an ASL Change Approval Form and submit it to the Stockage Determination Branch for approval. If the change is approved, it will adjust the CASL for all like-brigades. Units requesting an out of cycle ASL change must think through the impact of their request regarding like-brigades throughout the Army. If it is not justifiable for all, it may not be an adequate request.

Brigade CASLs do not have to be 100 percent the same. By regulation, they have a 5 percent allowance (of lines) for command directed lines. For these lines to be added and carried, they require a strong consideration justification for AMC and the HQDA G-44 (S) approval. This means, depending on the type of unit, 100 to 225 lines can be tailored to that specific brigade's requirements.

MONITORING SHOP STOCK LIST PERFORMANCE

Because the CASL is managed by AMC and HQDA G-44 (S), units need to closely manage the performance of their SSLs and ensure unit funds are purchasing parts that are not stocked at the SSA. The SSL is the lifeblood of the unit, and ensures that if equipment breaks it can be repaired quickly with on-hand parts. Readiness costs money, which can attribute to fill rates. A fill rate percentage measures how many parts come from the SSL. This, along with the other metrics that contribute to the overall performance, can be easily monitored through the Commander's Actionable Readiness Dashboard (C@RD). The C@RD provides commanders, battalion executive officers, SPO officers, and maintenance managers with a single snapshot of how the SSL is performing, which it displays using five key performance indicators (KPIs). The KPIs are stock by line value, fill rate, valuation, regulatory compliance, and inventory compliance (see Figure 25-1).

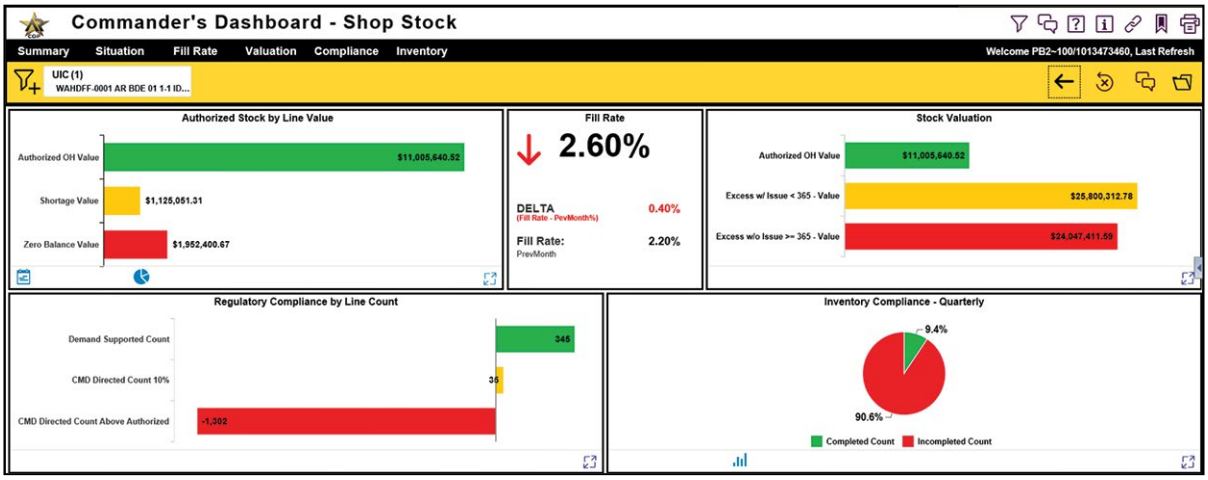

Figure 25-1. Sample C@RD

Stock by Line Value. A summary of monetary value of authorized shop stock by line. It gives a graphical depiction of the required resources that need to be applied to the unit's SSL to fully stock it.

Fill Rate. This measures the performance of authorized shop stock through the perspective of demand accommodation and demand satisfaction, informing the commander on how responsive the SSL is for the requirements that the unit is generating.

Stock Valuation. This shows authorized shop stock and excess posture for Class IX. This stock is categorized by materiels that have been issued (under 365 days) and have-not been issued (over 365 days).

Line Count. This shows demand supported, command directed, and lines that exceed authorization by count. This is a quick depiction of how many lines the unit is accounted for and what category they fall into. It shows how many parts must be turned in to the brigade's SSA.

Inventory Compliance. This shows the percentage of required inventories completed (quarterly requirement). This enables commanders to ensure their subordinates are conducting the required accounting of the SSL in accordance with the regulatory guidance.

Overall, the C@RD is a useful tool that provides leaders with KPIs that show a holistic view of how well the SSL is providing support to the organization.

SHOP STOCK LIST MANAGEMENT AND IMPROVEMENT

Managing and improving the SSL is critical to providing the best support to the battalion. FORSCOM and Army Enterprise Systems Integration Program (AESIP) both provide tools that help leaders shape their SSL. At the unit level, there are two transaction codes (t-codes) from Global Combat Support System (GCSS)-Army. One provides the data for what items are demand supported and one determines how many command directed lines the unit is authorized. Above the BCT level, the optimized SSL, top dead-lining parts, and top failing parts help provide commanders with direction to tailor the SSL to support their fleet.

At the unit level, understanding the materiel situation report (t-code: MAT_SIT) enables leaders to see what is on their shop stock and what items are accounted for. The materiel situation report has four different codes that identify the materiel requirements planning (MRP) type:

- Demand supported lines (coded as ZV) are items that have met the threshold to create a demand and carry on the unit's SSL.
- Command directed lines (coded as ZM) are items that did not meet the threshold to create a demand, but the command wants to carry. Command directed lines are limited in quantity — a unit is only authorized to carry 10 percent of demand supported lines compared to command directed lines.
- Provisional stock (coded as ZP) are lines that the unit adds to the SSL from the optimized SSL to mitigate the lack of demand supported lines.
- Non-demand supported (coded as PD) are lines that the unit accounted for but do not have the authorization to carry. These items should be turned in to the appropriate support activity.

Through the demand analysis report (t-code: ZCON1D), the shop office clerk determines what lines are demand supported. This code analyzes the demand over the past six months and identifies the lines that meet the threshold to add and retain on the unit's SSL. Executing this is imperative for keeping the SSL responsive.

The AESIP allows commanders and maintenance managers to find resources to help decide what items should be carried as command directed lines. Command directed lines do not require any demands for considered parts to be added, but the unit should verify the parts are not available on the CASL, and the SSL is precluded from carrying major assemblies.

The top dead lining parts tool allows units to analyze units dead lining work orders for a specified period of time. This allows any unit in the Army to be isolated for a given timespan to generate a list of parts required for their particular operation or environment. Leaders can use this information to develop their maintenance plans for future operations and shape their SSL.

The top failing parts tool provides leaders with a consolidated list of the top parts that have failed over a 12 month period. It also tracks the requisition and quantity of failed parts over time. This enables leaders to decide what parts should be added as command directed lines.

Optimized SSL is the third tool available to FORSCOM units. It is a menu of provisional stock lines that have been pre-authorized for units to carry on their SSL. Provisional stock lines mitigate the lack of demand supported lines. For example, if a unit executes a demand analysis report and finds they have only met the demand threshold for 100 lines, this allows them to carry 10 command directed lines (10 percent of the demand supported lines). Therefore, they have a total of 110 lines on their SSL. The optimized SSL provides a list of items that they can use to carry on the remaining 115 lines they are authorized to carry. (In an armored BCT, SSL size is limited to 225 lines).

These tools help commanders make adjustments and make their SSL more responsive to their organization's needs. The SSL is only as useful as the work that goes into it, and making it responsive gets combat power back into the fight quickly.

CHAPTER 26

Class IV Operations in Large Scale Combat Operations

CPT Stephen Chenault

INTRODUCTION

To adequately capture the nuance of effective Class IV operations, units must plan, resource, construct, and develop a distribution plan nested within planned obstacle efforts for the brigade. Truly effective Class IV operations are initiated before mission execution. They begin upon receipt of mission and during the military decision-making process (MDMP) while the unit is planning for the entirety of the tactical operation. The brigade engineer cell, along with the brigade engineer battalion (BEB) executive officer/S-3, should plan the type and amount of obstacle efforts required to emplace a successful defense, which directly correlates to the quantity and type of required Class IV combat configured loads (CCLs). Observations from the National Training Center reveal that most units arrive to a tactical scenario without this 'picture' to draw from and resort to a last minute planning session. This results in under-resourced obstacle efforts and can leave the brigade unable to mount the defense when/where/how envisioned.

CLASS IV PLANNING DURING MISSION ANALYSIS

Class IV construction standards vary greatly throughout each unit. During mission analysis sessions, units should utilize Table 6-2 in Technical Manual (TM) 3-34.85, *Engineer Field Data,* 17 October 2013, to establish their standards for CCL builds. This table prescribes requirements for 300-meter sections of various wire obstacles. Once extrapolated, the table informs units on the quantity of construction materials necessary to achieve the planned linear obstacle effort. The weak spot of most brigade Class IV plans is the build process, specifically the lack of tasking a competent and capable leader. By tasking a capable leader, units can ensure CCLs are built correctly. In the same vein, many brigades rely on the BEB to complete the Class IV CCL build, and do not resource sufficient personnel and material handling equipment to reduce construction time. Additionally, many brigades do not deploy with an adequate amount of ratchet straps or a tie down plan for the CCLs. This leads to Class IV strewn about the battlefield at the expense of the emplaced obstacle efforts.

CLASS IV — DISTRIBUTION PROBLEM

While distribution methods vary to afford responsiveness in operations, most units attempt to spread a small percentage of CCLs across forward support companies (FSCs), hedging their bets to rely on the combat sustainment support battalion (CSSB) throughout operations as an 'easy button' for Class IV distribution. Based on observations, this course of action can be ineffective because of the multiple constraints and limitations against the CSSB. A common successful course of action is to coordinate efforts and combine both FSC and brigade support battalion (BSB) assets to transport Class IV CCLs to the BSA or engineer supply points (ESPs). Using ESPs is the preferred method, as it affords the greatest continuity between engineers and sustainers. ESPs further ensure required construction materials are close enough to the obstacle efforts to minimize handling of the CCLs.

BRIGADE ENGINEER BATTALION ENABLER COORDINATION/INTEGRATION

Enabler units with specific BEB assigned missions are necessary to accomplish the tasks demanded by a BEB. The amount of subordinate units within a BEB in combat can vary from nine to over fifteen. This scope of responsibility presents unique challenges to the Echo FSC. There must be

increased attention to detail throughout reception, staging, onward movement, and integration (RSOI) and a concept of support must be established. Effective engineer dig operations often depend on the location of Echo FSC sustainment assets during the defensive phase. Most BEBs receive an engineer construction company with their organic fuel assets — typically two M978 systems — and Class III (B) storage capacity, which is often overlooked by the BEB/BSB staffs. When properly leveraged, using their organic fuel assets allows the unit to provide uninterrupted Class III support throughout dig operations. The unmanned aircraft system platoon typically collocates with the aviation task force in the rear area of operations, often near the division support area. If the concept of support does not integrate the sustainment of the unmanned aircraft system platoon into the aviation FSC or via the CSSB, the echo FSC must traverse vast distances to the rear area for minimal support. If integration and continuity are not the principle planning efforts of the logistic leaders, it can lead to negative effects for the Soldiers, equipment, and operation as a whole.

RECOMMENDATIONS FOR SUCCESS

Successful Class IV operations require deliberate planning and integration by engineers and sustainers. Developing a brigade-level Class IV CCL standard, and assigning the right leader to oversee CCL construction, drastically reduces the denominator between planned and emplaced obstacle efforts. Understanding the available distribution methods and deciding on the best method for the operation, typically ESPs, greatly minimizes the handling of Class IV and positions the commodity closest to the end user. Enabler coordination and integration are paramount in BEB operations to effectively leverage the assets in the operational environment.

SUMMARY

Units must strive to accurately plan, resource, construct, and develop a Class IV distribution plan nested within planned obstacle efforts. Units should utilize the principles of sustainment when developing Class IV operations in large scale combat operations. They should specifically focus on integration, simplicity, and continuity, which have proven effective in past operations. Establishing a brigade standard for Class IV CCL construction and distribution will reduce confusion throughout the operation. Include enabler unit leaders in the MDMP to ensure their capabilities are incorporated throughout the operation.

CHAPTER 27

Maintenance Management during Large Scale Combat Operations

CW4 Brian Blake and COL Brent Coryell

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019, with updates by CW4 Archie Morgan and CPT Tyler Ford)

The primary purpose of maintenance is to ensure the operational readiness of equipment. Maintenance during large scale combat operations (LSCO) generates combat power by conducting repairs quickly and as close to the point of failure as possible. Unfortunately, many maintenance management factors contribute to the decline of the operational readiness rate. Figure 27-1 shows the average operational readiness rates at the National Training Center (NTC). This chapter discusses maintenance management to be applied during LSCO, based on lessons and best practices.

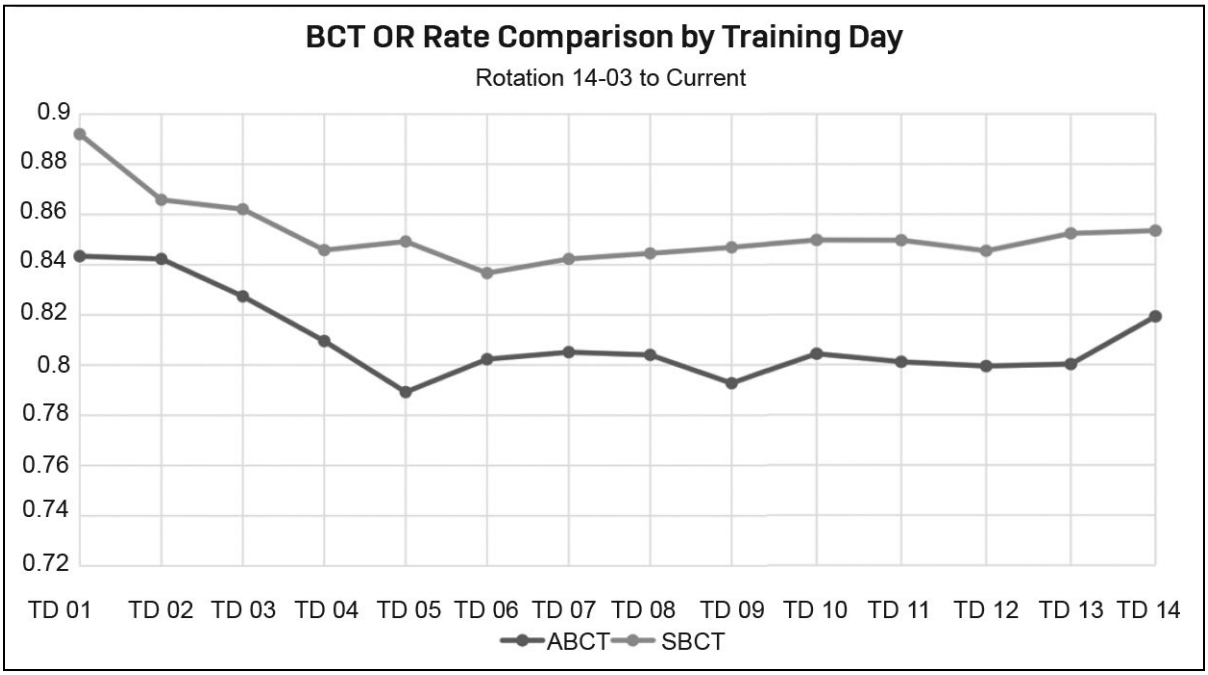

Figure 27-1. Average Operational Readiness Rates at the NTC

MAINTENANCE RECOVERY

Self-Recovery. If the situation allows, operators should attempt self-recovery by using their basic issue items or other recovering items that may have been issued.

Like-Recovery. Perform like vehicle recovery on wheels, and track equipment (except for the M577).

Dedicated Recovery. Contact the supporting unit for dedicated recovery using the nine line recovery format.

MAINTENANCE COLLECTION POINTS

Maintenance collection points (MCPs) should have established procedures and timelines for equipment that needs repaired and they should be mobile enough to move forward without restricting unit movements. Units often have multiple MCPs, usually at company, combat, and field trains. Brigade combat teams (BCTs) have a wide dispersion of forward support companies (FSCs) across the battlefield, specifically regarding the locations of an MCP. The combat trains and MCP should be located within a reasonable distance of the company trains forward line of own troops (FLOT) to prevent multiple movements and allow mechanics to fix forward, decreasing downtime. Site selection should be based on mission variables. Units have to decide whether to leave in place, move forward with the unit, evacuate to the brigade support area (BSA), or move the BSA forward to the MCP. The MCP should be ahead of the BSA and repair forward to expedite recovery, especially during offensive operations.

MAINTENANCE CHECKPOINTS

Units should establish maintenance checkpoints (usually a contact truck team) near refueling points, rest stops, or supply points, or attached to a convoy support center. The checkpoint provides roadside maintenance on small, easily replaceable repair parts, and battle damage assessment and repair. The team can also verify preventive maintenance checks and services (PMCS), and correct minor deficiencies and shortcomings.

MAINTENANCE BATTLE RHYTHM

One of the first things a BCT should do to manage maintenance during LSCO is establish and enforce a maintenance battle rhythm (see Figure 27-2). A maintenance battle rhythm establishes set times to complete critical maintenance actions. The battle rhythm also addresses the BCT's PMCS/ Department of the Army (DA) Form 5988-E, *Equipment Maintenance and Inspection Worksheet*, 01 March 1991, turn-in, dispatching cycle and equipment status report (ESR) scrub and maintenance meetings. Synchronize the battle rhythm with the brigade support battalion (BSB) support operations (SPO) to include the expected arrival of Class IX resupply on logistics packages.

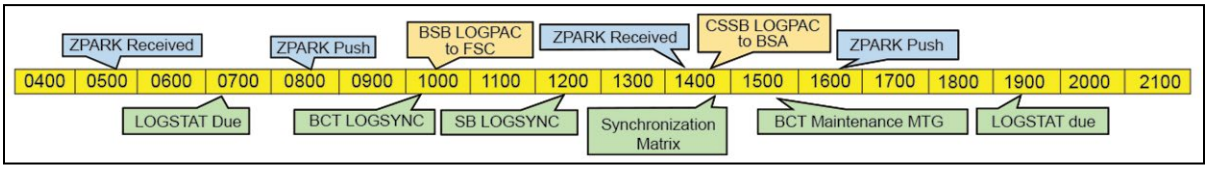

Figure 27-2. Maintenance Battle Rhythm

MAINTENANCE MEETINGS

Maintenance meetings are the forum for units to meet the commander's intent, focus on issues the commander deems critical, and ensure maximum responsiveness. These meetings are typically held in the BCT/battalion headquarters. The maintenance meeting should discuss current and projected combat power, repair parts status, cross-level options, estimated work completion dates, and external support needed. It allows for cross-communication among the units. The meeting should take about an hour and include unit missions, the priority of support/maintenance, repair timelines, and workload analysis. The ultimate end state of the maintenance meeting is shared understanding of generated combat power. BCTs that conduct effective maintenance meetings, both remote and in-person, have visibility on available combat power and maintenance readiness across the battlefield (see Figure 27-3).

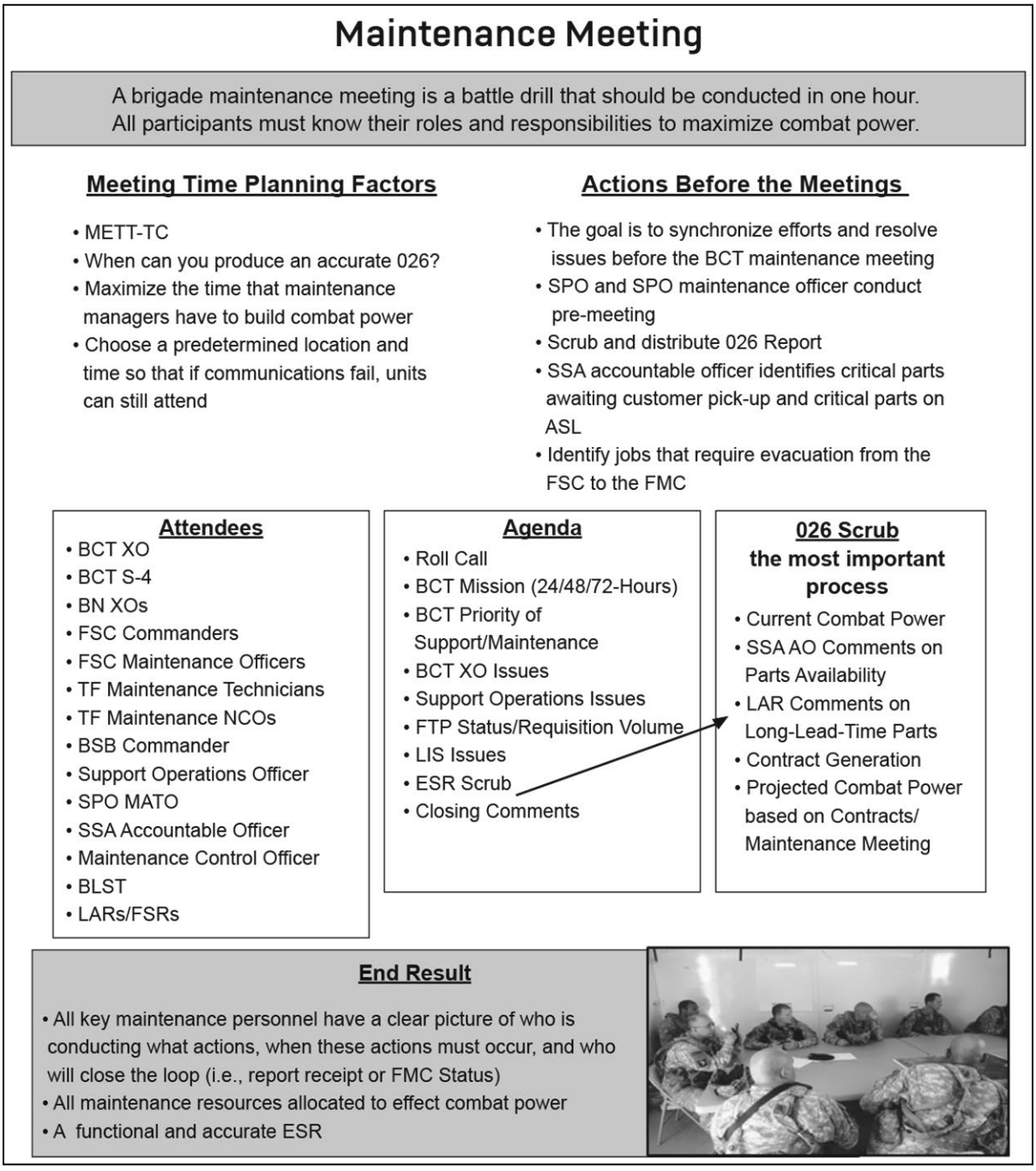

Figure 27-3. Maintenance Meeting

GENERATING COMBAT POWER

Effective maintenance management includes anticipating maintenance requirements, tracking and analyzing maintenance reports, identifying and diagnosing maintenance faults, applying the appropriate maintenance capability, and managing Class IX. Maintenance managers should allocate the appropriate amount and type of maintenance units to provide maintenance support to the force.

Maintenance management takes on a different personality at each level. However, each level must be able to forecast, plan, and employ maintenance assets. By utilizing the proper maintenance management techniques, units are able to fulfill their maintenance requirements.

Timely and accurate maintenance is essential to generating combat power. Managing battlefield maintenance can support the maximum return of equipment to full mission-capable (FMC) status. (See Figure 27-4).

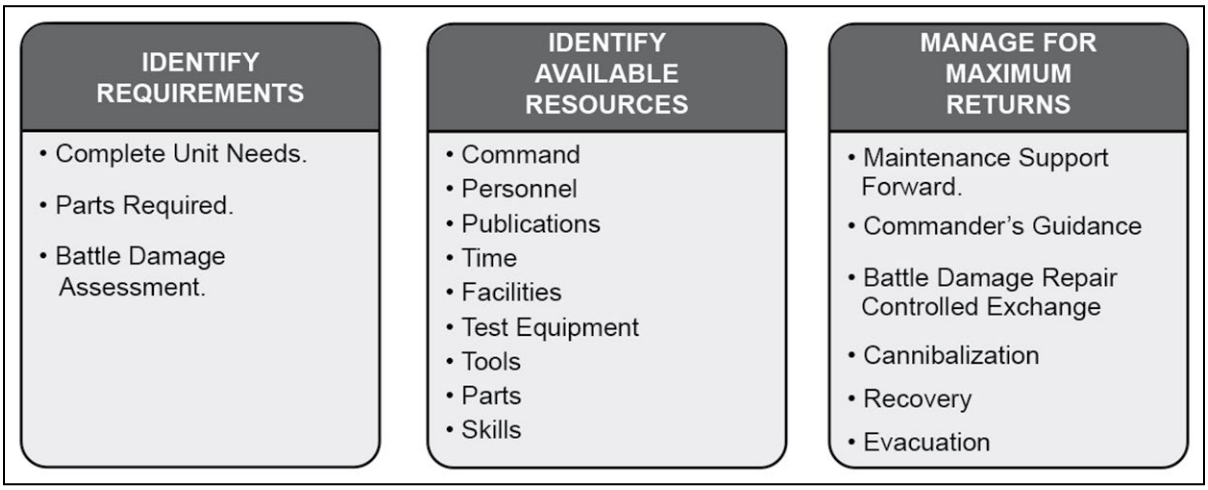

Figure 27-4. Managing Battlefield Maintenance Support[1]

The following are the three basic concepts for managing maintenance support:

- Identify which equipment requires maintenance by computing unit needs (based on priority), identifying the parts required to return to FMC status, and conducting minor quick repairs. The primary focus should be on weapon systems and the commander's critical equipment.
- Identify the resources available within the command to give commanders the best possible support. These resources usually include personnel, sustainment assets, time, environment, test equipment, tools, parts, and experience for establishing priority of repairs.
- Manage maximum returns with the commander's guidance by managing priority of support/ maintenance, projecting assets forward, using the shop stock list (SSL) and supply support activity (SSA), utilizing the walk-up process, massing person-hours and recovery, maintaining repair timelines at MCPs, matching requirements with a capability or resource, maximizing battle damage assessment, and repairing and controlling exchange to generate combat power.

PLACE NON-MISSION CAPABLE EQUIPMENT ON THE EQUIPMENT STATUS REPORT IMMEDIATELY

There is roughly a 10 percent average deviance between what is genuinely non-mission capable (NMC) and what is annotated as NMC on the ESR. This deviance provides a false combat readiness picture to the BCT commander and makes tracking BCT combat readiness very difficult. An inaccurate ESR is the most significant maintenance management challenge experienced by the BCT, with the ESR rarely matching the combat slant reported by units. Units that are on the move and not blasting, awaiting logistics assistance representative or field service representative support, not reporting equipment intended for a part walk-up, and extending troubleshooting times, all contribute to decreased accuracy. Every BCT has a different policy regarding the timeline

maintenance personnel have to place NMC equipment on the ESR. The time ranges from the first identification of the fault to upward of 96-hours. The average BCT policy is 24-hours for the mechanics to troubleshoot, diagnose, and repair the equipment before labeling it NMC on the ESR. Many units troubleshoot NMC equipment "off the record" for an unreasonable amount of time to maintain a higher operational readiness rate.

It has also been observed that some units try to maintain a higher operational readiness rate by annotating NMC faults as safety deadlines or by ordering an 02 non-deadlining priority part. On the Global Combat Support System (GCSS)-Army, an "X" symbol can be added next to the equipment, but it will still read as FMC, and therefore not count as NMC time. Units should not try to cover up NMC equipment. Call it as it is and get it on the ESR in the correct status. Deadline the equipment in GCSS-Army with the appropriate status code as soon as a mechanic can verify the fault if the repair is not something that maintenance personnel can fix immediately. Commanders should expect to get an accurate picture of fleet readiness by reading the ESR.

MONITOR AND MANAGE THE CLASS IX PARTS FLOW

On average, Class IX parts take three to four days for FSC maintainers to receive and install. It takes one day to process the parts at the next higher echelon SSA can then be picked up and delivered to the BSA by the division sustainment support battalion (DSSB). The BSB distribution company usually takes another day to receive and process the parts at the BSA SSA. Then it spends another day at the FSC before it finally makes it to the mechanic to install at the MCP. The BSB can minimize critical part delays by synchronizing movement between DSSB pushes and logistics packages. If BSB logistics packages are not synchronized with DSSB movements, the SSA could still be processing Class IX from the DSSB and have to wait until the following day to move critical parts.

Save time by having higher echelon SSA personnel process parts before the DSSB signs the parts for movement. This takes the workload off of the forward SSA, as they only need to place the part in the customer bin when it arrives. By processing parts at the next higher echelon SSA, units can also use aviation assets to move critical parts directly to the MCP location. Units often discuss and plan to establish an air resupply ring route for Class IX. A pre-established ring route, where the part is picked up from the main post going directly to the MCP, is the fastest way to get a critical Class IX part forward. If timing is appropriately synchronized, the MCP can potentially get that part the same day it is requested.

INVENTORY, REPLENISH, BENCH STOCK, AND SHOP STOCK

The shop stock is the first level of repair parts essential to readiness. Most units do not bring their SSL to a field environment to support their fleets. Many units claim that they do not have the mobile storage containers required to store and transport the SSL internally. Army Regulation (AR) 710-2, *Supply Policy below the National Level*, 28 March 2008, and U.S. Army Forces Command guidance state that all units must be able to transport their entire SSL in one lift using organic assets only. It is recommended that units conduct a thorough inventory of all Class IX parts on hand and, if it is not on a bench stock or shop stock listing, add it. Shop stock should be demand-supported.

TRAIN LOW-DENSITY MILITARY OCCUPATIONAL SPECIALTY REPAIRMEN AT THE FORWARD SUPPORT COMPANIES

NMC equipment that requires low-density military occupational specialty (MOS) experience is often sent back to the BSA because of the lack of FSC maintainer level proficiency. The underlying

issue is that field maintenance team mechanics are not getting the low-density specialty MOS training (maintenance training to repair small arms and ground support equipment) they need from the specialty technicians in the BSB shops. Thus equipment is not being repaired forward. Broken equipment gravitates to the BSB because that is where the warrant officer technician resides. The BSB often pulls the forward mechanics in these specialties back to the BSB field maintenance company, so they are under the commodity warrant officer technician's supervision. In other cases, items are not repaired because the untrained forward FSC mechanics have been missioned to do other things. Because these mechanics are unable to do their jobs, many maneuver commanders use them as unit armorers or orderly room clerks.

The BSB SPO and materiel officer, along with battalion task force S-3s and executive officers (XOs), could resolve this by publishing a training plan that develops the necessary technical skills for these maintainers, and enables them to troubleshoot and fix equipment forward. Commodity maintenance technicians at the field maintenance company should be actively conducting training and mentorship for low-density maintenance MOS personnel, to develop Soldiers' skills in the FSCs. To ensure repairs are conducted as far forward as possible, warrant officers should conduct battlefield circulation to forward maintenance shops, which may prevent wasted transportation time of equipment.

MANAGE MAINTENANCE WORK ORDERS IN THE GLOBAL COMBAT SUPPORT SYSTEM-ARMY

The field maintenance company is often tasked with security missions, such as operating the access control point and quick reaction force. This situation has contributed to very few field maintenance company work orders opened and processed in GCSS-Army. In other words, maintenance jobs that need to be repaired by the commodity shops do not routinely go through the maintenance control section. Instead, most jobs are taken directly to the commodity repair shops. They are repaired and returned to the user without the section leaders or technicians taking the necessary steps to open the job with the maintenance control sergeant. Most commonly, the sections with generally quick maintenance fixes, such as general support equipment, communications and electronics, and service and recovery (S&R), will work on equipment without ever opening a job order and accounting for person-hours or work completion. The justification is that it takes less time to complete the job than it does to conduct the proper work order process. Unfortunately, this prevents the company commander from having an accurate picture of available assets and the current workload of their unit.

PERFORM SAFE RECOVERY AND EVACUATION OPERATIONS

Recovery operations are typically not covered in the tactical standard operating procedures (TACSOPs), and units arrive with unqualified operators that are not H8 or H9 recovery operations certified. Soldiers often take an hour or more to perform simple recovery operations. Units rarely conduct a hasty recovery to move the vehicle out of the kill zone, but instead conduct a full recovery on site. This increases risk to all Soldiers. Like-item towing is a common practice, but every rotation has at least one towed vehicle accident. The majority of like-item towing is conducted by operators who do not read the technical manual on properly towing a disabled vehicle, and this often results in damaged equipment or injuries. Any wheeled recovery vehicle must have a certified H8 operator, and any track recovery vehicle must have two certified H9 operators.[2] A Soldier with multiple years of experience does not count as a certified H8 or H9 operator.

The TACSOP should include wrecker recovery and towing operations, including how units will combat load equipment and how many tow bars will be needed within a convoy. The brigade TACSOP should have recovery rehearsals, including a tow bar to vehicle ratio, within a convoy

so like-item towing can occur. The most experienced H8 or H9 Soldier should be in control of the operation. If a unit is short on H8 or H9 trained operators, they need to get mechanics into training so units can use all recovery assets. Stryker crew members and S&R recovery teams need to be fully trained on vehicle recovery methods for the Stryker. When like-towing a Stryker, units should not exceed 20 miles per hour on smooth terrain or roads, or 10 miles per hour on rough terrain with the transfer case disengaged. The S&R section must have tow bar extenders to help facilitate the recovery of Strykers with M984 wreckers.

TIME LIMITS

Units should establish time factors for evacuating NMC equipment from an MCP. Time limits identify the amount of time units have to repair a piece of equipment at each MCP before it must be moved to the BSA. The time limits should be flexible, and adjust to continuous operations and conditions. Each unit should be aware of time limits to manage workflow and workload effectively.

MAINTENANCE TRAINING

Managing sets, kits, outfits, and tools (SKOT) in LSCO is vital. The use and placement of the FRS, Shop Equipment Contact Maintenance, Shop Equipment Welding Equipment, and NGATS in LSCO are critical to providing warfighter support.

Maintenance leaders must emplace and advise senior leaders on how to utilize their authorized SKOT equipment and provide maintenance capabilities. Based on the construct of a maintenance support element and its supporting unit, the emplacement of SKOTs can vary across the battlefield. Understanding SKOT capabilities and the end-user's ability to utilize these systems will determine the best location for placement. Additionally, how a supporting unit conducts its warfighting mission and conceptualizes the direction of the supporting commander will assist in making this determination. Locations such as the BSA, field trains, combat trains, and FLOT are a few examples of where these systems are typically found in LSCO. Figuring out where to place a SKOT location depends on constant communication with the supporting unit, and the mission variables of advising, recommending, and providing the maintenance capabilities necessary to keep equipment FMC. Maintenance leaders must be prepared to assess their mission and apply the multiple variables to make an informed decision on their maintenance concept of support. How a maintenance element determines and executes the placement of their SKOTs can have a significant effect on their ability to support, and the ability of the supporting unit to operate and accomplish its mission.

Endnotes

1. Army Techniques Publication (ATP) 4-11, *Maintenance Operations*, 09 July 2019.

2. AR 750-1, *Army Materiel Maintenance Policy*, 28 October 2019.

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CHAPTER 28

Conducting Effective and Efficient Health Service Support Planning and Operations

CPT Lauren Teal and COL Brent Coryell

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019, with updates by CPT Thad Nelson and MSG C. Cuyno)

Brigade combat team (BCT) health service support (HSS) planning and operations that are observed during decisive action rotations at the National Training Center are usually more reactive than proactive. HSS needs to be completely integrated with tactical maneuver plans and mission orders, and it generally is not. Reactive and unintegrated HSS plans result in died of wound rates averaging 54 percent, requiring evacuation to Role 2 (urgent and priority patients). This means that one out of two wounded Soldiers requiring urgent care will die, and therefore the Army must get better at HSS planning.

Figure 28-1 shows statistics for the average died of wound rates over 11 rotations. However, these statistics only include urgent and priority casualties, showing the population of patients that required evacuation to rapid higher roles of care.

	BCT Type	WIA (U, P)	Total DOW	DOW %
ROT 1	SBCT	1055	536	51%
ROT 2	ABCT	555	250	45%
ROT 3	SBCT	1128	602	53%
ROT 4	ABCT	934	614	66%
ROT 5	ABCT	548	314	57%
ROT 6	ABCT	512	272	53%
ROT 7	ABCT	900	590	66%
ROT 8	SBCT	770	351	46%
ROT 9	SBCT	763	431	56%
ROT 10	SBCT	898	457	51%
ROT 11	ABCT	937	429	46%
	Average	818	441	54%

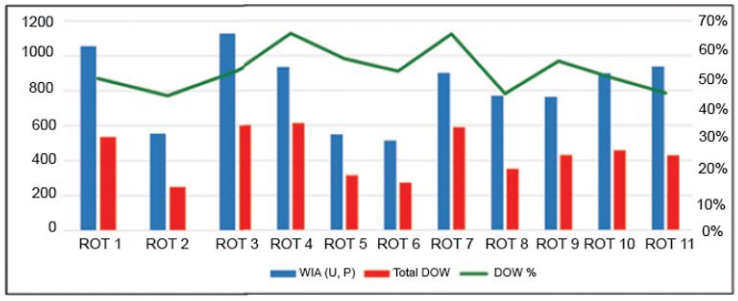

Figure 28-1. Average Died of Wound Rate over 11 Rotations at the National Training Center

DELINEATE BRIGADE COMBAT TEAM MEDICAL PERSONNEL ROLES AND RESPONSIBILITIES

Roles and responsibilities of key medical personnel must be clearly identified. Roles and responsibilities for the brigade surgeon section (BSS), brigade support battalion (BSB), support operations (SPO) medical office, and brigade support medical company (BSMC) commander are typically unclear, which produces friction during the development and execution of the BCT HSS plan. The friction points that arise when the BSS, SPO medical officer, and BSMC commander do not effectively communicate during HSS planning and execution can usually be traced directly back to delineating who is responsible for HSS planning and execution. HSS planning requires collaboration between the SPO medical officer, the BSS, and the BSMC commander to build a fluid, comprehensive, and executable HSS plan. Table 28-1 is a useful starting point for establishing defined roles and responsibilities for these individuals.

Table 28-1. Roles and Responsibilities of Medical Positions

Medical Responsibilities	Brigade Surgeon Section	Support Operations Medical Section	Brigade Support Medical Company	Battalion Medical Operations Officer/ Platoon Sergeant	Brigade Nurse	Operational Public Health	Brigade Medical Supply Office	Medical Maintenance
Advise on the health climate and conduct health promotion education at echelon	X				X	X		
Advise the command at echelon on prevention of climatic injuries	X			X	X	X		
Advise the commander at echelon on HSS and monitor operations via mission command systems	X	X	X	X				
Produce Appendix 3 to Annex F at echelon	X			X				
Track bulk water sanitation and certification, field sanitation kit compliance, and training of field sanitation teams at echelon		X		X		X		

Medical Responsibilities	Brigade Surgeon Section	Support Operations Medical Section	Brigade Support Medical Company	Battalion Medical Operations Officer/ Platoon Sergeant	Brigade Nurse	Operational Public Health	Brigade Medical Supply Office	Medical Maintenance
Collect BCT regulated medical waste, develop and store Class VIII push packages, manage BCT Class VIII authorized stockage list and warehouse, order BCT Class VIII, and supervise BCT medical maintenance							X	
Communicate with battalion medical officers (MEDOs) and echelon above brigade (EAB) assets	X	X	X					
Conduct staff estimates and medical intelligence preparation of the battlespace (IPB) at echelon	X	X		X				
Coordinate ancillary services and assessments		X		X				

Medical Responsibilities	Brigade Surgeon Section	Support Operations Medical Section	Brigade Support Medical Company	Battalion Medical Operations Officer/ Platoon Sergeant	Brigade Nurse	Operational Public Health	Brigade Medical Supply Office	Medical Maintenance
Coordinate and track ophthalmology missions and assessments and monitor and provide guidance on proper field sanitation and waste disposal at echelon		X	X	X		X		
Coordinate EAB medical requirements and integrate into the BSMC footprint as necessary		X	X					
Develop and submit at echelon Class VIII budget requests, coordinate Class VIII delivery, and track Class VIII status/ordering	X	X	X	X			X	
Execute medical evacuation (MEDEVAC) requests			X	X				
Guide the BCT providers and medical support personnel	X							
Take charge of Patient Hold within the BSMC					X			

Medical Responsibilities	Brigade Surgeon Section	Support Operations Medical Section	Brigade Support Medical Company	Battalion Medical Operations Officer/ Platoon Sergeant	Brigade Nurse	Operational Public Health	Brigade Medical Supply Office	Medical Maintenance
Take responsibility for medical readiness at echelon	X		X	X	X			
Develop and refine medical tactical standard operating procedure at echelon	X	X	X	X				
Monitor and brief medical maintenance status at echelon, utilizing Global Combat Support System-Army		X	X	X			X	X
Monitor vehicle and equipment status	X	X	X	X				
Perform routine medical maintenance and services throughout the brigade, and maintain medical maintenance shop stock								X
Conduct the BCT medical synchronization		X						

Medical Responsibilities	Brigade Surgeon Section	Support Operations Medical Section	Brigade Support Medical Company	Battalion Medical Operations Officer/ Platoon Sergeant	Brigade Nurse	Operational Public Health	Brigade Medical Supply Office	Medical Maintenance
Take responsibility for the force health protection at echelon	X	X	X	X	X	X		
Advise the BCT command on BSMC and Role 2 operations and integration into tactical operations			X					
Supervise technical training for medical personnel at echelon	X		X	X	X			
Synchronize HHS at echelon and coordinate current operations		X	X	X				
Synchronize Role 2 support with the BCT HSS plan and coordinate BCT tasking of the BSMC		X	X					
Track disease and nonbattle injury trends and provides analysis to the BSS				X	X			

THE BRIGADE SUPPORT BATTALION SUPPORT OPERATIONS MEDICAL TEAM

The SPO medical section is the main point of contact for all HSS issues within the BCT.

The SPO medical section consists of a medical operations officer, a medical logistics officer, and a medical operations noncommissioned officer (NCO). The SPO medical section's ability to synchronize the HSS plan, coordinate medical assets, communicate requirements, manage medical current operations, and manage reporting is often overlooked. The SPO medical section is frequently not staffed or integrated into the development of the HSS plan. Many times, the battalion MEDOs bring HSS issues straight to the BSS or the BSMC commander for assistance, as they do not understand the role of the SPO medical section. The SPO medical section should serve as the main point of contact for HSS issues within the BCT by receiving medical situation reports, publishing daily medical common operational pictures (MEDCOPS), and coordinating for EAB medical assets, when required. The SPO medical section should also synchronize current HSS operations and conduct medical IPB for the BCT. The SPO medical section should work directly with the BSMC commander to identify and articulate capabilities, requirements, and shortfalls in the HSS plan to the BSS.

THE BRIGADE SUPPORT MEDICAL COMPANY COMMANDER

The BSMC commander is the senior Army medical department officer in the BCT and usually has the most experience in medical plans and operations.

The BSMC commander frequently reacts when supporting the BCT's HSS plan because they are rarely part of the planning process. When the BSMC commander does not receive bottom-up feedback and refinement to the HSS plan, the BSMC is forced to adjust as the battle occurs. Per modified table of organization and equipment (MTOE), and in most BCTs, the BSMC commander is often the senior Army medical department officer with tactical experience. Before command, many BSMC commanders served as battalion MEDOs and may have served in a planning capacity as an SPO medical planner or BCT medical planner. As a result, the BSMC commander has often accumulated more experience in medical plans and operations than other BCT medical personnel. The BSMC commander should also maintain an understanding of current personnel and equipment status at the Role 2, giving them the ability to help the BCT medical planner gain better understanding of capabilities, requirements, and shortfalls within the HSS plan. Because the BSMC commander has the most HSS planning and operational experience, they should coordinate and synchronize Role 1/2 support within the BCT HSS plan. The BSMC commander should also integrate EAB medical assets into the BSMC footprint, monitor and support evacuation and ancillary service requests, and monitor patient tracking.

THE BRIGADE SURGEON SECTION

The BSS only consists of the BCT surgeon, the BCT medical planner, and one medical operations NCO. Because the section is so small, it is difficult for them to manage future operations, casualty tracking, and MEDEVAC request prioritization around the clock. Additionally, many BSSs have inexperienced personnel, which makes managing HSS tasks difficult. The BCT surgeon is a provider, and usually has little to no experience operating in a tactical environment. Similarly, the medical planner is a pre-command captain or senior lieutenant without the requisite experience. Ultimately, the BSS is responsible for developing the HSS plan (Appendix 3 to Annex F) and

distributing it to subordinate medical elements before execution. The BSS's physical proximity to the BCT staff allows them to understand the BCT commander's intent and the developing maneuver plan. The BSS must understand the capabilities of each medical element and additional requirements at echelon to support the maneuver plan.

The BCT surgeon is responsible for the technical control of all medical activities within the BCT and keeps the BCT commander informed of the status of the brigade's combat health support operations and the health of the command. The BCT medical planner is responsible for developing the plan and producing the order, along with conducting medical reporting and inputting into the medical IPB. With such a small and inexperienced section, everyone should understand the roles and responsibilities of the other personnel within the BSS. This creates shared understanding and allows the BSS to operate on all shifts. Additionally to bridge the experience gap, it is recommended for the medical planner to attend the 70H course (Health Services Plans, Operations, Intelligence, Security and Training) and for the medical operations NCO to attend the 300-F (Combat Paramedic) course and battle staff.

BATTALION MEDICAL OFFICERS

MEDOs play an integral role in developing the sustainment plan in conjunction with the battalion's maneuver plan. The problem is that many MEDOs are junior officers (lieutenants) and do not necessarily understand their battalion responsibilities during the development, refinement, and execution of the HSS plan. Battalion MEDOs should work with the BSS and BSMC commander during the military decision-making process (MDMP) to refine the BCT HSS plan. Instead, battalion MEDOs often scramble to fit in and support the BCT HSS plan late in the planning and preparation phase. As a result, MEDOs misunderstand their planning role on the staff and serve primarily as a casualty reporting and tracking manager. They are often unprepared or apprehensive to communicate the platoon's realistic support capabilities, and therefore cannot give the commander and staff a realistic sense of how the medical platoon can support various battalion courses of action. With incomplete battalion medical staff work comes the inability to communicate specific concerns, requirements, or shortfalls to the BSS and BSMC commander. Senior medical personnel within the BCT (including the BCT medical planner, BSMC commander, and BSB commander) should provide mentorship to battalion MEDOs, helping develop their role in the MDMP and shaping BCT HSS operations.

DEVELOP AND PUBLISH THE HEALTH SERVICE SUPPORT PLAN

During preparation of the HSS plan, medical personnel at all echelons should be involved in the MDMP. The BSS, battalion MEDOs, and BSMC commander rarely collaborate for HSS planning. This stove-pipe planning situation creates disjointed and desynchronized HSS plans, mismanagement of limited medical assets, and ultimately makes adherence to Army HSS planning principles difficult. The best HSS plan ensures resources are available at the appropriate proximity and concentration. HSS planners must understand the tactical task and purpose of main and supporting efforts to identify requirements in the treatment and evacuation aspects of the HSS plan.

The following are key elements of BCT HSS plan:

- Location of all medical assets;
- Battalion casualty collection points;
- Casualty estimates;
- HSS capabilities/limitations;

- Priorities of support for ground and air MEDEVAC;
- Time distance analysis;
- BCT ambulance exchange point (AXP) locations;
- Primary and alternate evacuation routes;
- Maneuver-based triggers;
- Primary, alternate, contingency, and emergency (PACE) communications plans (battalions and brigade);
- Patient decontamination locations;
- Clean and dirty routes; and
- Class VIII status/requesting.

> The HSS plan must be synchronized and tied to maneuver triggers. It should be focused on anticipated engagement areas and the subsequent casualty zones resulting from enemy contact.

The HSS plan should include casualty estimates, maneuver tasks and triggers, and specific medical treatment and evacuation capabilities. The HSS plan should adhere to the principles of Army HSS, which include conformity to the maneuver effort, mobility consistent with supported elements, proximity to the forces supported, flexibility to shift scarce resources where needed, continuity of care through all echelons, and control of resources to provide the greatest good to the greatest number within the operational environment.[1] The HSS plan should be focused on the anticipated engagement areas and the subsequent casualty zones resulting from enemy contact. There are other important and often overlooked tasks related to HSS that non-medical personnel must execute, including chemical, biological, radiological, and nuclear (CBRN) casualty decontamination; non-standard casualty evacuation (CASEVAC) planning and coordination; and mass casualty plan development. No HSS plan is complete without identifying and planning for these circumstances.

EXECUTE THE HEALTH SERVICE SUPPORT PLAN

Once the HSS plan is developed, it must be executed. The biggest challenge for the BSS with the HSS plan is the transition from future operations to current operations. The BSS owns the plan during future operations, but as it transitions into current operations, the SPO medical section, the BSMC commander, and the BSB commander manage the plan, while the battalion MEDOs and command sergeants major execute the plan. If the handover from future operations to current operations does not occur, or the plan is not well understood following the sustainment rehearsal, the BSS usually gets pulled into managing current operations. This creates voids in developing the HSS plan for future phases of operations. The BSS must identify the point in which the plan transitions from future operations planning within the BSS into current operations management by the SPO medical section and BSMC commander. Handing the plan over to current operations personnel allows the small BSS section to continue future planning and manage the current inherent section operations requirements, such as casualty tracking and air MEDEVAC management. As the HSS plan is executed, medical personnel managing FUOPs and current operations must constantly revisit the following:

- Does the plan conform to the task and intent of the maneuver commander?
- Does the plan allow the unit to remain mobile and provide support quickly?
- Does the plan keep the unit proximate to the supported force?
- Does the plan allow the unit to easily flex assets where needed?
- Can the unit provide continuity of care to their patients?
- Can the unit control the plan and HSS assets?

Produce Casualty Estimates. Casualty estimates provide useful information at all echelons. They help anticipate MEDEVAC and CASEVAC requirements, casualty volume at battalion aid stations, expected mass casualty situations, and projected Class VIII requirements. Many units produce a casualty estimate and brief the estimate at rehearsals, but few units conduct the additional work to identify the impact of estimated casualties. This impact can cause a need to reallocate resources, ask for task-organization changes or additional support, or identify additional evacuation requirements. Working with the BCT S-1, the BSS should produce casualty estimates and analyze those estimates. Battalion MEDOs must do the same with the battalion S-1. These estimates should be correlated with battalion capabilities to identify any shortfalls or additional requirements. The BSS and battalion MEDOs should understand the maneuver plan by phase (and any maneuver triggers associated with the plan) and produce corresponding casualty estimates. With casualty estimates, the BSS and battalion MEDOs can begin to reallocate resources, work with first sergeants to identify additional CASEVAC platforms, reinforce aid stations with an additional treatment team from BSMC, or identify a period of time to request non-standard air CASEVAC resources.

Develop and use Maneuver Triggers in the HSS Plan. BCT units often identify Role 1 and 2 anticipated locations and AXP or evacuation support requirements, but rarely develop maneuver based triggers associated with movements, making it difficult to create shared understanding. As a result, support elements revert to internally developed time-based triggers. When medical personnel use time-based triggers and maneuver forces use maneuver-based triggers, the end result is AXPs or treatment team jumps occurring before they are needed, or medical support elements positioning at inappropriate locations to support the fight. Additionally, without well-understood triggers, executing area medical support becomes difficult, as units plan to rely on others but do not understand how the plan will shift and change over time. The HSS plan must be specifically synchronized and tied to maneuver triggers. This can become more manageable through the development and use of a HSS matrix.

> Medical personnel must understand the maneuver plan and triggers associated with operations. Digital and analog products in medical command posts need to include not only sustainment and medical graphics but also maneuver graphics and objectives.

Develop and Follow an HSS Synchronization Matrix. The HSS synchronization matrix is a great synchronization tool that is seldom used to create understanding and manage the HSS plan. A HSS synchronization matrix outlines each battalion's proposed locations, capabilities or requirements at each treatment or evacuation node, triggers associated with movements, and AXP locations supported during phases. The matrix can also include communication considerations, such as alternate means of communications during a BCT command post or BSMC jumps, and information for distributing Class VIII needs anticipated before or following a phase. Similar to

a logistics synchronization (LOGSYNC) matrix, an HSS synchronization matrix outlines when and where the BCT can expect area medical support. While it may be difficult to provide specific locations before execution, the matrix should contain the information discussed and rehearsed at the sustainment rehearsal. Using an HSS synchronization matrix also identifies potential issues with AXP management and BCT evacuation resources, and helps identify ground and air evacuation priorities by phase. To help BCTs utilize the HSS synchronization matrix, the BSS, SPO medical section, BSMC, and battalion MEDOs should conduct home station medical synchronization/ working groups to develop a base Appendix 3 to Annex F. These should be flexible enough to adjust during BCT orders production against specific mission sets.

Similar to a LOGSYNC matrix, an HSS synchronization matrix outlines when and where the BCT can expect area medical support.

Integrate the HSS Plan into the Sustainment Rehearsal. The HSS plan is often not well distributed or understood by MEDOs or the BSMC commander before the sustainment rehearsal. As a result, units tend to make last minute changes that are not socialized with other parts of the plan and do not take capabilities into account. This affects the sustainment community's ability to create shared understanding during the rehearsal, as planning often occurs instead. The BCT sustainment rehearsal should be detailed and rehearse points of friction within the HSS plan to help synchronize assets and create shared understanding of the plan. The HSS portion of a sustainment rehearsal should mirror the most important aspects of the HSS plan.

A comprehensive HSS rehearsal should include the following:

- The BCT surgeon should brief the overall CASEVAC plan. The surgeon should discuss ground and air evacuation capabilities, anticipated bands of casualties, possible friction points in the HSS plan, patient decontamination locations, proposed support locations once patients are clean, and clean and dirty routes based on the CBRN assessment.
- The BCT S-1 should brief casualty estimates and personnel replacement operations.
- The battalion MEDOs should brief on aid station locations (main and forward) and responsibilities, standard and nonstandard evacuation platform capacity, casualty collection point locations, and actions from the point of injury to casualty collection points and Role 1s.
- The BSMC commander should brief the Role 2 location, AXP locations, capabilities, and triggers to provide and shift support.

Once briefed, the plan must be rehearsed with injects over time and space correlated with phases to create understanding. This is the time to voice any shortfalls and concerns that were not previously identified during planning and development. Details, such as identifying support requirements for casualty density versus available capabilities, are essential. Units should discuss friction points during the sustainment rehearsal, including asset relocation, area medical support, and shortfalls in the current plan, to help rehearse solutions.

Develop and Monitor a MEDCOP. During planning, BCT units sometimes develop a medical concept of support but are not able to maintain a communication flow that enables accurate reporting, with updates and dissemination of the ever-changing MEDCOP, through execution. Without a clear understanding of the MEDCOP, it is difficult for the BSMC commander to ensure medical assets are efficiently and effectively employed. During execution, continuous communication is essential and drives the SPO medical section's development and refinement of the MEDCOP. The

MEDCOP should be simple, easily understood, readily available, and widely disseminated. Joint Capabilities Release (JCR)/Joint Battle Command-Platform (JBC-P) overlays are useful, as they depict locations, proposed and current, of treatment and evacuation nodes.

Determine Medical Information and Reporting Requirements. Few BCT units are trained on medical information reporting, which is critical to developing and executing the HSS plan, building the MEDCOP, and answering the medical commander's critical information requirements (CCIRs). Units that do well with medical reporting identify specific reporting information requirements, specify the reporting method and time, and dictate events that require additional spot reports. Medical situation reports that include location, personnel strength, vehicle maintenance strength, Class VIII shortages, and treatment and evacuation capability, feed the development and synchronization of the MEDCOP. Medical situation reports give the BSS, SPO medical section, battalion MEDOs, and BSMC commander a greater understanding of proximity, allow those entities to make decisions that facilitate flexibility and control to provide resources, help build future medical staff running estimates during the MDMP, and provide situational understanding for commanders at all levels. Units must identify what information is useful for the MDMP, MEDCOP development and maintenance, and medical CCIR. If the information does not feed a higher purpose, then the reporting requirement is unnecessary and wastes time. In a time-constrained or communications-constrained environment, it is important to identify and refine the reports that feed planning or execution. If casualty reports are required, which they should be, the BSS should be clear and succinct about the required information. Battalion MEDOs have limited time between planning, platoon operations, and battalion execution of medical operations. If specific formats or details are not disseminated and trained, the BSS and SPO medical sections rarely receive the information they need. Reporting requirements within the BCT should be identified and standardized within BCT standard operating procedures.

Develop and Publish an HSS PACE Plan. Many units underestimate the importance of developing and exercising a PACE plan. Without effective and timely communication, the BSS cannot understand the capabilities and shortfalls at the Role 1 or Role 2 that will affect execution of the HSS plan. Similarly, if timely communication is not occurring, the SPO medical section and BSMC commander cannot fully understand the maneuver plan and medical requirements necessary to effectively support. BCTs have communications challenges because of modified table of organization and equipment authorizations. Many of the platforms available to the BSS (Command Post of the Future, Ventrilo, Secret Internet Protocol Router Network, Non-classified Internet Protocol Router Network, and JABBER) are limited at the battalion level, and not organically available to company or medical platoons. Rather, at the Role 1 and Role 2, units are authorized JCR/JBC-P and frequency modulation (FM) communications. As a result, the BCT medical community often develops elaborate PACE plans requiring multiple communication platforms and relay of information. This does not facilitate timely or continuous communications. It creates barriers to easy reporting, and makes dissemination of a plan, once developed, difficult. If battalion MEDOs participate in BSS meetings, consider periodically conducting these meetings over field mission command nodes to refine the PACE plan. This will help build and refine a medical communications card containing JCR role names at all echelons, email addresses if email is used, and frequencies at echelon.

> Units can increase communication by developing and validating a medical communications card, listing platoon, company, battalion, and BCT role names for JCR/JBC-P, email addresses, and FM frequencies at echelon.

DETERMINE THE OPTIMAL ROLE 1 LOCATION

Split aid station operations may facilitate better support to a widely-dispersed force, and can be a useful method to bound resources forward while the other treatment section completes treatment and evacuation of injured personnel.

Though several medical functions are available in the BSMC, they are not widely dispersed at the battalion level. Role 1 care only consists of trauma life support (treatment), evacuation resources, and medical mission command. Role 1 provides the first echelon of definitive care for injured Soldiers, and as such, needs to maintain proximity to the supported force. Role 1 must be able to provide life-stabilizing treatment while not being too bogged down with any equipment or tent setup that can affect rapid relocation. Role 1 locations must rehearse efficient setup and tear down of equipment and trauma beds. If using tents or camouflage nets, platoon load plans should facilitate the hasty employment of these shelters. The ability to efficiently occupy and displace from a location is essential, as is the ability to relocate and use terrain features effectively for survivability. A geographically dispersed forward line of own troops may drive the need to split a battalion aid station. Conducting split operations in team A and team B (main and forward aid stations) can provide flexibility to the HSS plan. This can provide continuous coverage, especially if the teams bound successively, to provide support as supported units continue maneuver. Battle tracking within the Role 1 is imperative to help anticipate future moves once maneuver elements disperse more than a few kilometers from the Role 1 location.

CONCLUSION

A successful BCT HSS plan relies on integrating all stages of staff work and the MDMP with the maneuver plan. Medical personnel at all echelons must identify and understand their roles and responsibilities, which drives planning, synchronization, asset management, reporting and bottom-up feedback, and execution. Planning should be collaborative, and planners must use reporting tools and casualty estimates to identify capabilities, requirements, and the subsequent shortfalls that require additional attention and coordination. Once developed, the HSS plan should be disseminated through effective sustainment rehearsals and a medical synchronization matrix. During execution, the HSS plan should be managed using maneuver-based triggers, ensuring all personnel pulling support from the HSS plan speak the same language. The HSS plan relies on an effective PACE plan to ensure all personnel can communicate changes or friction points that arise. Through this communication and the analysis of reports, the BCT must manage and distribute a MEDCOP frequently, providing personnel access to the ever-changing area medical support situation. Medical leaders must ensure that once casualties are sustained, the BCT has timely access to Role 1 and Role 2 medical functions through the efficient movement and employment of BCT medical assets.

Endnote

1. Field Manual 4-02, *Army Health System*, 17 November 2020.

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CHAPTER 29

Conducting Effective and Efficient Casualty Evacuation/ Medical Evacuation and Ambulance Exchange Point Operations

CPT Lauren Teal and COL Brent Coryell

(Previously Published in Center for Army Lessons Learned (CALL) Publication 18-10, *Brigade Sustainment in Decisive Action Operations*, February 2019)

Brigade combat team (BCT) medical evacuation (MEDEVAC) and casualty evacuation (CASEVAC) planning and operations create significant challenges getting Soldiers definitive Role 1 or Role 2 medical care in a timely manner. MEDEVAC/CASEVAC plans need to be completely integrated with tactical maneuver plans and mission orders, and need to be rehearsed and synchronized at all levels before execution. MEDEVAC/CASEVAC operations need to occur simultaneously during maneuver operations and cannot wait until fighting has ceased to ensure the survivability of urgent and priority patients. While the MEDEVAC/CASEVAC plan is just one portion of the BCT's health service support (HSS), it is integral to medical success.

EVACUATION RESPONSIBILITIES — WHO OWNS WHAT?

Because of manning shortages, maintenance issues, or a hesitancy to push evacuation assets forward as part of forward evacuation section responsibilities, many brigade support medical company (BSMC) roles evacuate a large number of casualties directly to an AXP or Role 2, putting extra strain on the already limited standard evacuation assets available at the battalion level.

Evacuating Soldiers from one role of care to the next higher role of care (for example, Role 1 to Role 2) is the responsibility of the higher role (in this case, Role 2).[1] This is a general rule, but there are considerations that drive deviation from this methodology. For example, units residing in the rear area, in close proximity of Role 2, commonly plan to evacuate their own casualties to Role 2 because of their proximity and low-anticipated casualty numbers. Units must plan to execute the operations they are manned and equipped to support, not the operations they want to support. Medical planners and BSMC commanders need to be clear about what they can and cannot support. With that said, the primary function of the evacuation platoon in a BSMC is to help the BCT evacuate casualties from Role 1 to Role 2 or provide area evacuation support to units with no organic evacuation capability.

MEDICAL EVACUATION AND CASUALTY EVACUATION PLATFORM PLANNING

BCT medical planners need to understand each echelon's unit capability to MEDEVAC patients and provide en route care. Without understanding MEDEVAC capability by task force and location of anticipated casualty zones, planners are challenged to identify shortfalls and must deliberately conduct CASEVAC planning to fill the gap (see Figure 29-1).

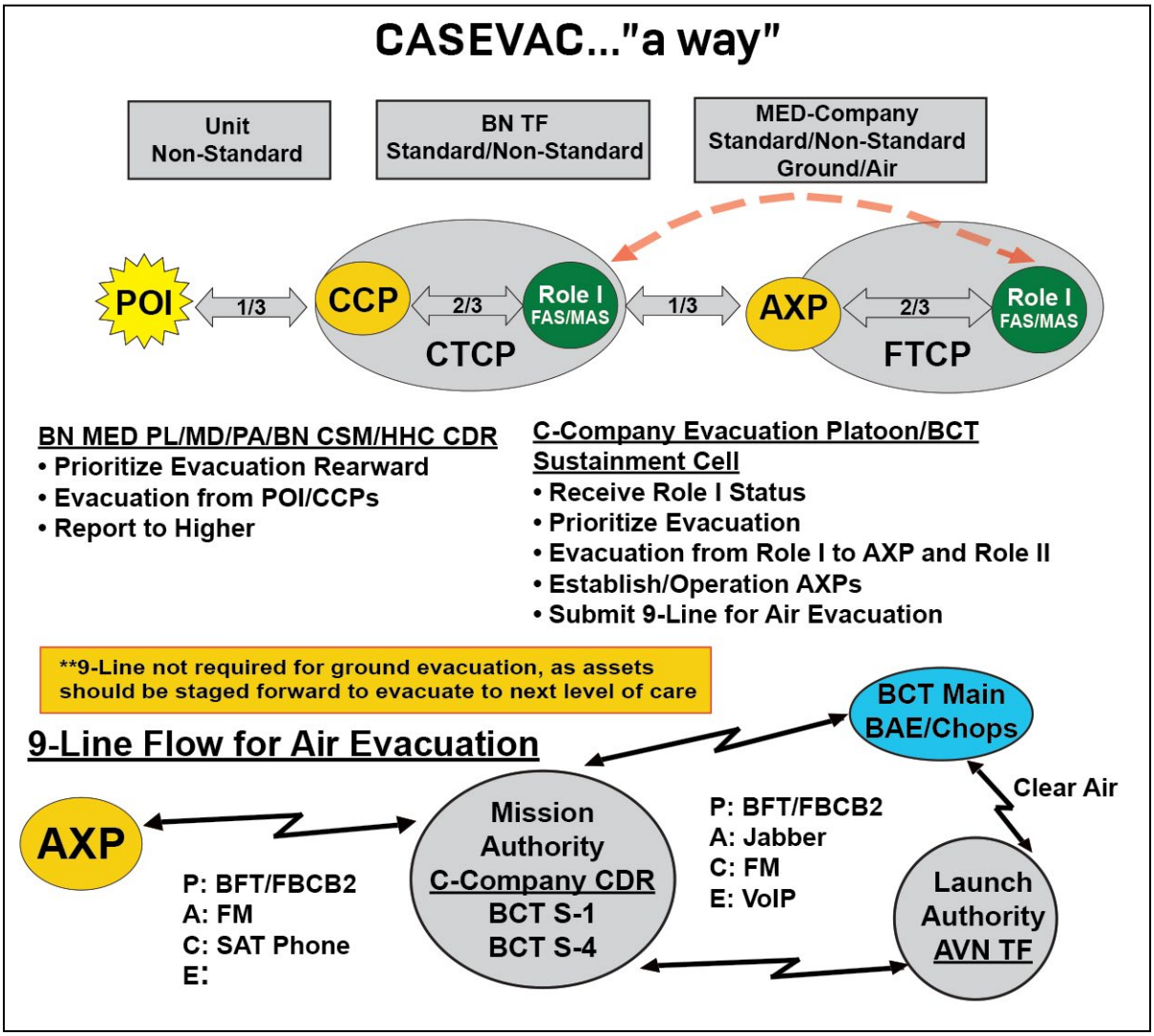

Figure 29-1. CASEVAC "A Way"

Breaking the battlefield into more manageable segments by using CCPs and AXPs helps planners and executers maximize MEDEVAC capability.

MEDEVAC platforms (M113, M997, M1113, and HH-60) give units the ability to rapidly move wounded, injured, and sick personnel between roles of care while providing en route medical care. An efficient MEDEVAC system provides care to casualties quickly, provides treatment and monitoring en route to improve the prognosis of patients, and helps clear the battlefield of causalities so the maneuver fight can persist. It is not enough for planners to know the number of standard evacuation platforms. They must also understand where those MEDEVAC platforms are located, with respect to expected casualty zones. This understanding gives planners an idea of the standard litter and ambulatory capability of a task force. When analyzed against casualty estimates, battalion medical operations officers and the brigade surgeon section (BSS) can then identify shortfalls in the plan. These shortfalls drive deliberate CASEVAC planning. CASEVAC refers to the movement of casualties on non-medical platforms (M1083s, M1151/M1097, CH-47, and UH-60) without the benefit of en route medical care and monitoring. CASEVAC is recommended to move less severely injured patients to appropriate roles of care, and should be used when

MEDEVAC platform capabilities are overwhelmed. When possible, providing a medic or combat lifesaver (CLS) trained Soldier on those platforms, with a CLS or medic bag, is preferred. While not equipped to provide standard en route care, these personnel can monitor patient conditions and reassess medical interventions.

Since CASEVAC operations can reduce combat power and degrade the efficiency of the Army Health System, units should only use CASEVAC to move Soldiers with less severe injuries when MEDEVAC assets are overwhelmed.[2]

Medical planners must understand and allocate or reallocate MEDEVAC assets in conjunction with casualty estimates and anticipated casualty zones. These planning tools, when compared to casualty transport capability, identify shortfalls and drive CASEVAC planning. CASEVAC planning must be deliberate. Personnel executing CASEVAC must understand their role in the evacuation plan and the routes they need to take to the next higher level of care.

EVACUATION PLANNING TOOLS — CASUALTY COLLECTION POINTS

CCPs are planned, designated, and briefed at battalion sustainment rehearsals and combined arms rehearsals, but often not leveraged or staffed to streamline the evacuation process from point of injury to battalion Role 1. CCPs can be an effective tool to pool casualties in one or multiple locations, giving a platoon or company a reference point to transfer casualties, reassess medical treatment, and arrange for further evacuation to a higher level of care, generally a battalion Role 1 or BCT Role 2 facility. CCPs should be planned in a secure area that offers protection from both indirect and direct fires. The location of CCPs should allow for ground access and the rapid turnaround of evacuation platforms, so they can return to their supported element once casualties are transferred. If available, the CCP should also allow the use of air MEDEVAC assets. CCPs should be planned and staffed as far forward as the tactical situation permits and be clearly marked by natural terrain features, manmade structures, or marking devices. Staffing and running the CCPs is the next higher level of care's responsibility. For example, a company first sergeant oversees the evacuation from platoon to company CCPs with the senior company medic. The senior company medic triages and treats casualties at the CCP and coordinates with the first sergeant for the evacuation of those personnel to the battalion Role 1.

As the company maneuvers forward during operations, preplanned CCP locations should be designated. Once activated, company personnel should consider manning the CCP with either combat medics or CLS personnel to provide initial lifesaving medical treatment. Also consider positioning the company first sergeant at the CCP with evacuation platforms, either standard ground ambulances or non-standard evacuation assets, to quickly direct the evacuation of personnel once triaged by the company senior medic or CCP staff.

EVACUATION PLANNING TOOLS — AMBULANCE EXCHANGE POINTS

AXPs can be very effective tools. They can help transfer patients from a slower medical platform, such as an M113 tracked ambulance, to an M997 wheeled ambulance or air MEDEVAC platform, gaining speed during transport. They can also maximize the use of limited evacuation assets by directing casualties to a limited number of locations for further transport, and help return supported unit ambulances to their respective units more quickly. However, there are a few challenges that units face when executing AXPs. First, units that use AXPs sometimes collocate those AXPs with Role 1 locations instead of planning traditional AXPs, and second, many units are averse to manning AXPs. Some units choose to not use AXPs at all, but rather allocate Role 2 evacuation platforms as direct support assets.

AXPs are a tool to provide a manned or planned location as far forward as tactically allowable. This is generally one third of the distance from the supported unit to the next higher role of medical care. Medical planners should take the terrain of the operational environment into consideration, locating AXPs in areas that provide natural or manmade cover and considering time-distance analysis. Using AXPs to break the operational environment into smaller segments allows supported units to rapidly exchange casualties from one MEDEVAC platform to another and return to their supported elements. Using brigade AXPs also allows units to access the brigade medical company's assets, maximizing the use of those evacuation platforms. Unfortunately, there is an emerging trend where units use the brigade medical company's evacuation assets for direct support to Role 1 locations. While direct support to Role 1s may help fill shortages in available MEDEVAC assets within that specific unit, it limits the rest of the brigade's ability to effectively evacuate large numbers of casualties from multiple locations.

Also observed during direct evacuation support is allocating that support to "spread the wealth." Units allocate equal numbers of available evacuation platforms across each battalion, instead of allocating resources based on mission risk, main effort versus supporting efforts, or projected casualty estimates. Additionally, units use direct support assets to transport casualties directly from Role 1 to Role 2. While this is effective over short distances, as BCTs maneuver forward and CASEVAC distances increase, travel time increases and direct support becomes less effective. After the first load of sick or wounded, direct support ground ambulances must travel long distances to do subsequent flips, and this affects the survivability of many urgent casualties. Similarly, when units choose to collocate AXPs with task force Role 1s, the AXP becomes problematic for both the collocated Role 1 and other battalion task forces. By collocating AXPs with battalion aid stations, the AXP increases the Role 1's footprint and forces the Role 1 to deal with an influx of BCT casualties. Collocated AXPs also decrease Role 1 mobility and ability to provide care to their battalion as they move forward during the active phases of the battle. When possible, consider manning AXPs. Manned AXPs provide a visible location for incoming ambulances and make linkup in time and space more manageable, especially during night operations. Supported task force ambulances do not have to wait for Role 2 ambulances to arrive and can quickly transfer casualties. Medical mission command at a manned AXP can be an asset for the BSMC commander, providing a communication node at the AXP to triage incoming casualties, prioritize ground support, and leverage air MEDEVAC. AXPs help to gain speed when transferring injured Soldiers from a slower platform to one with more speed.

Using direct support medical assets from the brigade medical company to task force Role 1 and collocating AXPs with Role 1, decreases the efficiency of medical assets from Role 1 to Role 2 evacuation. Consider using direct support for ambulance allocation over shorter evacuation distances or in situations in which task force ambulance support is unavailable. Also, avoid a "spread the wealth" allocation of assets. Each mission is unique, and casualty estimates should be referenced when reallocating BCT-level evacuation assets to battalion task forces. When planning AXPs, avoid collocating AXPs with Role 1s, as this course of action does not decrease evacuation timelines or the return of ambulances to supported units. It does decreases Role 1's mobility and ability to provide care on the move. As mentioned above, consider manning AXPs. This may not be feasible over long periods of time, but can be very effective when supporting major operations or during periods of anticipated casualties. Manning AXPs ensures a rapid transition of casualties from supported elements, makes linkup easier, and can provide medical mission command at the AXP, which makes using air MEDEVAC or an air AXP much easier.

EVACUATION PLANNING TOOLS — AMBULANCE SHUTTLE SYSTEM

An ambulance shuttle system is a useful tool to manage evacuation resources and provide flexibility to medical planners during the evacuation of BCT casualties. However, units rarely employ a shuttle system. Ambulance shuttle systems allow for flexibility and efficiency when moving casualties from the battlefield. The following is a detailed list of ambulance shuttle system components:

- Ambulance loading point. This is a point in the shuttle system where one or more ambulances are stationed ready to receive patients for evacuation.
- Ambulance relay point. This is a point in the shuttle system where one or more empty ambulances are stationed. They are ready to advance to a loading point or to the next relay post to replace an ambulance that has moved. As a control measure, relay points are generally numbered from forward to rear.
- Ambulance control point. This consists of a Soldier (from the ambulance company or platoon) stationed at a crossroad or road junction where ambulances must take one of two or more directions to reach loading points. The Soldier, knowing which location each loaded ambulance has come from, directs empty ambulances returning from the rear. The need for control points is dictated by the situation. Generally, ambulance control points are more necessary in forward areas.[3]

When managing multiple AXPs, consider using an ambulance shuttle system to flex assets where necessary. If challenged with limited security to protect ambulances during evacuation, employing a shuttle system and positioning security at relay or control points can help manage limited security forward. Commanders or platoon leaders can exercise more control of asset movement forward or rearward by placing a mission command element within the ambulance shuttle system. Additionally, the shuttle system avoids massing evacuation assets forward and reduces the risk of enemy contact.

MISSION AND LAUNCH AUTHORITY — GROUND VERSUS AIR

Units are frequently challenged to effectively employ air MEDEVAC and fully leverage the BSMC's ground evacuation assets, instead relying heavily on the Role 1 to move casualties to higher roles of care. Usually, the BSS section maintains mission authority for air MEDEVAC requests, prioritizing those requests for the BCT. Often the BSMC or BSB commander maintains mission authority for ground MEDEVAC requests. Synchronization becomes difficult if all entities do not maintain situational awareness through monitoring requests for both methods of MEDEVAC. Often, battalions request assets and the BSS or BSMC act on those requests, but fail to notify supported battalions. As a result, battalions launch assets to conduct evacuation to Role 2 while BCT ground assets or division air assets are simultaneously launching to provide support. Coordination and feedback is required to and from the BSS, the BSMC, the support operations medical section, and the requesting unit once air or ground assets are requested, approved, and launched. Before execution, units must discuss who takes mission authority for air MEDEVAC when the designated entity is jumping or when communications are limited.

CONCLUSION

Success of the BCT MEDEVAC/CASEVAC plan relies on understanding the maneuver plan and properly planning for assets against forecasted casualties, prioritizing and allocating limited evacuation assets, and planning for employment of air and ground ambulances. Once the evacuation plan is developed and published, it should be rehearsed during the HSS portion of the sustainment rehearsal. Medical and non-medical personnel at all echelons must understand their roles in the

evacuation process — providing treatment and planning resources to care for and transfer wounded Soldiers. During execution, using mission command nodes that manage evacuation planning tools, such as CCPs, AXPs, or shuttle systems, create an effective MEDEVAC/CASEVAC plan. To avoid confusion and missed 9-line requests, mission and launch authority for air and ground ambulances must be discussed and rehearsed, and a contingency plan must be developed during limited communications or BCT command post and brigade support area operations center jumps. Leaders must ensure that once casualties are sustained, those casualties are quickly moved to lifesaving care through a robust MEDEVAC/CASEVAC system and plan.

Endnotes

1. Army Techniques Publication (ATP) 4-02.2, *Medical Evacuation,* 12 July 2019.

2. Ibid.

3. Ibid.

CHAPTER 30

Optimally Establishing the Brigade Support Medical Company for Role 2 Operations

CPT Lauren Teal and COL Brent Coryell

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The brigade support medical company (BSMC) Role 2 is the only medical facility in the brigade combat team (BCT) capable of providing laboratory, x-ray, and patient holding. Therefore, it is important to establish these services quickly. Role 1 depends on Role 2 to provide further diagnostic support to patients. While Role 2 is being relocated, Role 1 may have to hold a patient for several hours, waiting for Role 2's establishment. When Role 2 becomes functional enough to receive patients, Role 1 can transfer patients and remain mobile. Establishing Role 2 services quickly also allows it to support the BCT while the rest of the company continues to set up additional tents for treatment space, command post operations, and other ancillary workspaces. The purpose of this chapter is to provide a general understanding of Role 2 best practices at a very basic level and is most appropriate for junior lieutenants and noncommissioned officers unfamiliar with the medical unit setup to gain a better understanding of BSMC employment within their unit.

DETERMINE THE BEST LOCATION IN THE BRIGADE SUPPORT AREA FOR THE ROLE 2 FACILITY

Role 2's location within the brigade support are (BSA) is important. Most units locate the Role 2 toward the center of the BSA. There are a few factors to consider when choosing a suitable location. The first is security and communication. With no modified table of organization and equipment (MTOE) crew-served weapons, a location toward the center of the BSA offers the BSMC and its patients more security. It can also offer additional communications support if the location is close enough to the battalion tactical operations center to run Secret Internet Protocol Router Network (SIPRNET). A SIPRNET connection enables a more robust primary, alternate, contingency, and emergency (PACE) plan with the BCT surgeon section and the aviation task force for air medical evacuation (MEDEVAC) support.

One of the most important considerations for the Role 2 location is the availability of a suitable helicopter landing zone (HLZ). Placing the landing zone within the BSA close to the Role 2 enables patient pick-up and drop-off, especially if patients must be carried by litter to and from aircraft. An HLZ located within the BSA requires a larger Role 2 and BSA footprint, especially if CH-47 platforms are being used. Placing the HLZ outside the BSA can enable a smaller and more defensible BSA perimeter, but requires a more robust transportation plan for casualties and increases transport time. It may also require some consideration within the entry control point (ECP) support plan. Consider establishing a primary HLZ within the BSA for HH-60 aircraft and an alternate HLZ outside the BSA for larger platforms.

A final important consideration for the placement of the Role 2 is the transportation road network. While the Role 2 should be situated on a visible, trafficable road network, it should not sit along a road with high traffic or on a logistics supply route. In doing so, units run the risk that ambulances will be caught in a traffic jam of logistics convoys. Consider establishing the Role 2 along a route that diverges from the flow of logistics packages. Similarly, consider using an emergency ECP

for ambulance traffic. Although this may create an additional point that requires manning and defending, it can help cut down on ECP traffic and will keep ambulances from being held-up behind incoming or outgoing logistics elements. If an emergency ECP is not feasible, consider an ambulance bypass route at the main ECP to facilitate quick entry and exit.

ESTABLISH THE GENERAL ROLE 2 LAYOUT

There are a variety of layouts that units can use to successfully execute Role 2 operations. Layouts are largely driven by available tents, service availability, and additional equipment resourced. Placement within the BSA and orientation to BSA road networks and entry ECP can also influence the Role 2 layout. Regardless, a functional setup should include all services and functions of the BSMC. Figure 30-1 shows a Roll 2 layout example.

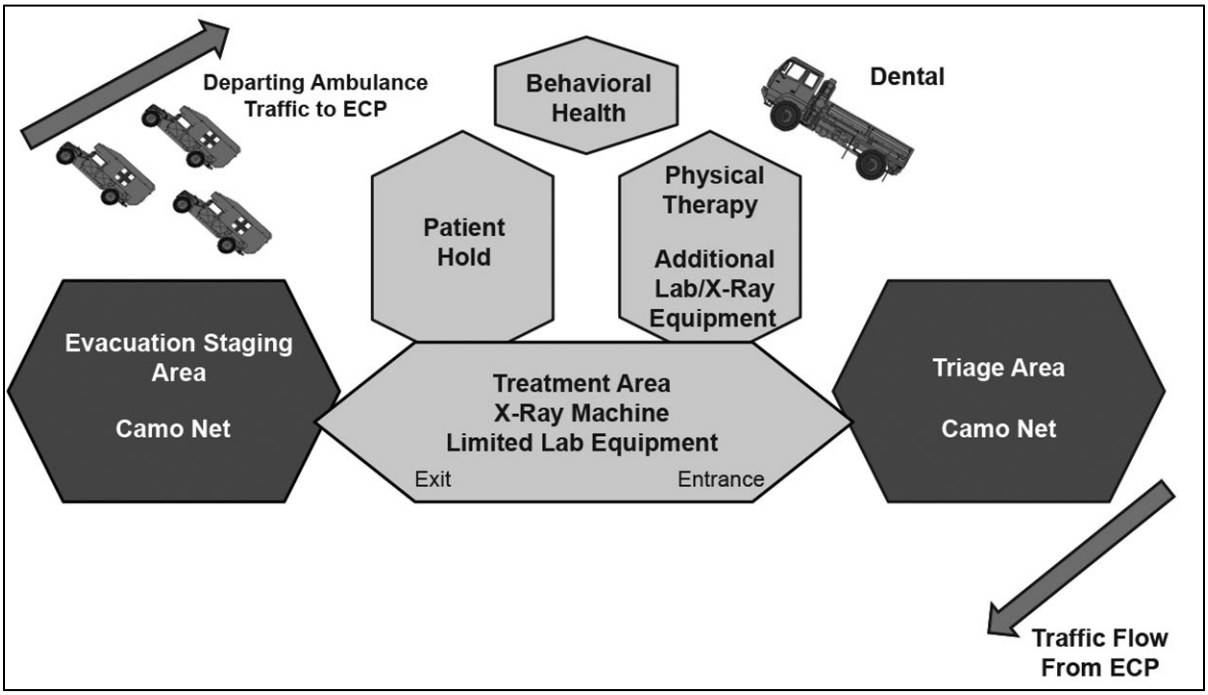

Figure 30-1. Example Role 2 Layout

Role 2 layout is largely dependent upon available tents. A variety of different layouts can be effective as long as patient flow from triage, through treatment, and to evacuation works well. Additionally, orienting Role 2 within the BSA traffic flow plan is important to facilitate efficient entry and exit of ambulances. The following is a list of recommendations for specific areas.

Establish the Treatment Area. Establish a clearly defined triage area marked with immediate, delayed, minimal, and expectant areas. All areas should include any medical supplies necessary to sustain patients before their transition into the treatment area. Clear the entrance and exit of the treatment area. Stock and equip trauma beds uniformly to ensure all personnel know where to find supplies on every bed. Ensure it is a respectful area out of the general view of passersby, and maintains shade and quiet while expectant patients are with the unit chaplain.

Establish the Evacuation Area. Create a clearly defined evacuation holding area for patients that require further evacuation (urgent, priority, or routine). The area should be stocked with enough supply to facilitate checking interventions and continuing care until evacuation occurs.

Establish the Dental Area. Units that are authorized the M1087 Expando van (armored BCT) need to use it for the dental area. This setup allows for quick power generation when towing a generator, storage for all equipment during movement, and a more sterile environment for field procedures.

Establish the Laboratory and Radiology Area. Ensure easy and efficient access to laboratory and x-ray equipment. If space is limited, the x-ray machine and iStat lab supplies should be maintained in the trauma area, if there is not enough space for the x-ray computer and reader or manual lab equipment.

Establish the Patient Holding Area. Ensure the patient holding area is not within the flow of patients from treatment to evacuation. Do not use the patient holding area as a thoroughfare during evacuation for patients requiring immediate evacuation. Doing this not only adds an additional patient handover but also impedes the recovery of appropriate patient hold personnel (return to duty within 72-hours).

Establish the Behavioral Health Area. Create a behavioral health area that is private and allows providers and patients to conduct treatment efficiently and gives patients privacy.

Establish the Brigade Medical Supply Office Area. The brigade medical supply office must maintain connectivity for medical communications from combat casualty care to facilitate receiving orders, processing orders, and sending requests to higher medical supply echelons. Consider collocating at least part of the section with the supply support area for very small aperture terminal connectivity and synchronizing the distribution of Class VIII through logistics packages.

DETERMINE THE PRIORITIES OF WORK

The amount of equipment needed to provide all Role 2 services can make establishing and relocating the Role 2 a daunting task. An efficient setup should include well-devised and executed priorities of work. While units may prioritize specific tasks differently based on patient needs, generally the priorities should include the following.

Establish Tailgate Medicine and Role 1 Capability Upon Occupation. Once security is established and communications are established or maintained in mounted platforms, the next priority of work for the BSMC should be establishing a treatment footprint capable of at least tailgate medicine and then Role 1 capabilities. This can transition later to a more established footprint once tents begin to be set, but the company must be capable of treating casualties once on ground. Become functional, and then work to get comfortable.

Establish an HLZ. Units may choose to have this task performed by the evacuation headquarters section or other members of the evacuation platoon. Establishing, clearing, and reporting an HLZ immediately upon occupation facilitates patient pickup and drop off with air MEDEVAC. The HLZ location should immediately be sent to the BCT headquarters and the aviation task force.

Adjust Other Priorities Before Occupation. The priorities above should remain constant at each new location. However, setup priorities may vary from location to location in a decisive action environment based on the amount of time the Role 2 is anticipated to remain in place. If the Role 2 will only remain in a location for 24- to 48-hours, perhaps not all camouflage netting or shade areas are needed. Conversely, being in a location for four days or a week or more may warrant more tents, resupply sets, or shaded work area setup. Before relocation, set and distribute those variable tasks, assigning or adjusting section responsibility to alleviate confusion. Units should develop a hasty and more established setup plan with corresponding priorities of work.

CONCLUSION

The BSMC's Role 2 provides necessary and unmatched services within the BCT's health service support plan. As such, it is vital that those services are established in a timely and efficient manner. From layout design to priorities of work, occupation setup must be deliberate and rehearsed. Additionally, location within the BSA's security plan, road networks, and air MEDEVAC HLZ all contribute to patients' timely and safe access to medical care.

CHAPTER 31

Conducting Effective and Efficient Brigade Medical Supply Office Operations

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Planning for medical materiel, or Class VIII, is crucial for patient care. Class VIII is often the forgotten class of supply and obtains little visibility until there is a complaint or issue. Brigade combat teams (BCTs) rarely synchronize Class VIII operations with the rest of the BCT's planning and distribution cycle. When planning for Class VIII, units rarely use medical intelligence preparation of the battlespace (IPB) analysis, historical data of medical materiel ordering, or anticipated needs based on deliberate forecasting. This chapter presents the best practices for efficient Class VIII resupply and brigade medical supply office (BMSO) operations and discusses how to best forecast Class VIII requirements. It covers challenges and best practices observed with the development and management of authorized stockage lists (ASLs) and medical push packages. It also provides guidance on developing a Class VIII primary, alternate, contingency, and emergency (PACE) plan and managing Class VIII distribution.

INTEGRATE THE SUPPORT OPERATIONS MEDICAL LOGISTICS OFFICER AND BRIGADE MEDICAL SUPPLY OFFICER INTO MEDICAL INTELLIGENCE PREPARATION OF THE BATTLESPACE

Very few BCTs integrate the support operations (SPO) medical logistics (MEDLOG) officer and the BMSO into the BCT's medical IPB. The SPO MEDLOG officer and BMSO use medical IPB analysis to gain understanding of the operational environment and the effects of that environment on Soldier health. They also use medical IBP analysis to understand the resulting health risks and considerations that will drive Class VIII needs at Role 1 and Role 2 aid stations. The SPO MEDLOG officers and BMSO need to understand the BCT task organization, mission, and scheme of maneuver. They need to understand the size of each unit formation, including enabler attachments and detachments, to accurately forecast Class VIII requirements. These two brigade support medical planners should understand the operational casualty estimates inherent to offensive, defensive, and stability operations. Different operations produce more casualties, and more casualties mean additional Class VIII.

USE CASUALTY ESTIMATES AND HISTORICAL DATA TO HELP FORECAST CLASS VIII REQUIREMENTS

Casualty estimates obtained from the BCT S-1 section or brigade surgeon section are necessary to forecast Class VIII resupply requirements. While medical planners often produce casualty estimates, the SPO MEDLOG officers and BMSO are rarely aware of those estimates and the effect that sustaining those casualties could have on Class VIII supplies at each battalion aid station. An analysis of historical Class VIII order data and turn-in records can be useful for setting and managing Class VIII budgets. Historical records show seasonal ordering trends for sick call medication needs. Turn-in records for expired medications and supplies helps provide analysis of over-ordered items.

MANAGE THE CLASS VIII AUTHORIZED STOCKAGE LIST

> Class VIII ordering often occurs when the BMSO runs out of an item, instead of when a stocked item reaches a preset reorder point.

Validating the BCT's ASL is incredibly important. However, few BCTs conduct periodic ASL reviews. The BMSO ASL review board should be managed just like a Class IX review board. Participants should include all physician assistants from the BCT, with final approval to the BCT surgeon and brigade support battalion (BSB) SPO officer. In many units, the BMSO's ASL includes only current supplies on-hand, instead of the critical items that, if not on the ASL, will have a wait time longer than what is needed for mission requirements. Frequently, the ASL is either too small to support the BCT's medical needs or has not been validated by the BCT surgeon or BSB commander. Similarly, few BMSOs set stock levels within the ASL for items or identify reorder points that drive consistent restocking. The BCT surgeon, SPO MEDLOG officer, and BMSO must deliberately build an ASL based on unit medical equipment sets, critical often-ordered items, and items with longer wait times, all while keeping in mind item shelf life and temperature control considerations to minimize waste. Intentionally building an ASL helps to stock regularly requested items based on medical set capabilities. Set stock levels and reorder points for ASL inventory using historical ordering data to cut down on pass-back ordering and decrease wait times. Once built and resourced, units should conduct yearly ASL reviews to validate quantities and the continuing need of certain items.

> The ASL should be built on the unit medical equipment sets, with input from the BMSO officer, SPO MEDLOG officer, and unit providers.

MANAGE MEDICAL EQUIPMENT SET'S CLASS VIII STOCK

Once the BMSO and BCT surgeon have compiled and validated an appropriate ASL for the unit's mission requirements, the BMSO must then manage the ASL stock. Class VIII stock is managed in two ways. The BMSO must carry and forecast the items and quantities at the BCT level, while battalion customers inventory, forecast, and order to meet their needs. Within a BCT, most battalions are authorized one to four tactical combat medical care sets and four to ten ground ambulance medical sets. Because these sets cover a large portion of most battalion's medical set needs, stocking the expendable components of one to two of these sets within the BMSO ASL helps ensure items are available to customers. Since many items in medical equipment sets have limited shelf life, BMSOs should adjust the stock level before field exercises and deployment to ensure items do not expire before issue. At the user level of the battalion aid station, sets should be inventoried quarterly, and also after major exercises. Inventories should identify items in low quantity and items within 90 days of expiration, which drives routine ordering.

MANAGE COMBAT LIFESAVER BAG CLASS VIII STOCK

Treatment in the BCT begins at the point of injury with self-aid and buddy-aid. One of the medical tools that facilitates point of injury treatment is the combat lifesaver (CLS) bag. Each squad, crew, or equivalent-level unit should have at least one CLS bag, along with CLS certification. This equates to hundreds of CLS bags within a BCT. Management of the supplies in the bag falls on the individual user, but forecasting and acquiring supplies is the responsibility of several other entities. The company senior line medic and platoon medic need to ensure all CLS bags are inventoried regularly, checking for serviceability and item expiration. Medics within the battalion aid station

resupply company line medics and order bulk supplies through the battalion aid station Class VIII account. The BMSO and SPO MEDLOG officers must plan for and budget CLS bag resupply requirements annually, tracking historical ordering to help forecast needs.

MANAGE INDIVIDUAL FIRST AID KIT CLASS VIII STOCK

Every Soldier carries an individual first aid kit (IFAK) for self-aid and buddy-aid. While the IFAK pouch is usually issued at the central issue facility upon in-processing to a unit, rarely are the actual medical contents issued. Similar to CLS bags, it is the responsibility of the individual Soldier to check for serviceability and expiration of their IFAK. Acquiring supplies works much the same as CLS bag resupply. The battalion aid station orders bulk supply to distribute to each company, and platoon and company medics request and distribute IFAK contents to their supported Soldiers. Because most Soldiers are issued IFAK pouches without contents, the BMSO and SPO MEDLOG officers must plan and budget for IFAK supplies annually. Units should budget IFAK needs based on anticipated Soldier turnover. For example, if 25 to 30 percent of a unit is anticipated to permanently change station within the next year, the SPO MEDLOG officer and BMSO should budget enough IFAK supplies to issue to 25 to 30 percent of the unit's population.

BUILD AND VALIDATE CLASS VIII PACKAGES

While many BMSOs develop Class VIII push packages before operations, a few validate the contents of the push packages with supported units and providers or distribute a list of the standardized push packages to ensure that units understand the contents. Many BMSOs develop Class VIII push packages for the treatment of certain types of injuries, such as burns, hemorrhages, or airway management. If customers are unaware of the contents or existence of push packages, or if the BMSO has not assembled and prepared the packages for distribution, the lack of preparedness negates the convenience of such packages. Similar to validating an ASL, the BMSO needs to work with supported units and providers to build and validate the contents of push packages. Once validated, a list of each push package should be distributed to all supported units and included in the BCT medical standard operating procedure or BMSO standard operating procedure. Class VIII push packages are ideal for quick resupply during early entry operations, in emergencies when casualty density is greater than anticipated, or for general scheduled resupply.

DEVELOP A PRIMARY, ALTERNATE, CONTINGENCY, AND EMERGENCY PLAN FOR REQUISITIONING CLASS VIII

BCTs usually identify a PACE plan before mission execution. However, the communication methods are often infeasible, impractical, inconvenient for customers, and not rehearsed or validated. Systems must be in place to communicate, track, stock, and distribute Class VIII before mission execution. The BCT's PACE plan should include the Medical Communications for Combat Casualty Care (MC4) and the Joint Capabilities Release (JCR)/Joint Battle Command-Platform (JBC-P). These systems are great tools to order Class VIII and communicate status. The MC4's Defense MEDLOG Standard Support Customer Assistance Module (DCAM) application is the Army system of record and the preferred Class VIII communication tool. However, BCTs rarely employ MC4's DCAM application to order and track Class VIII at level I (battalion level) or level II (BMSO). This is because few units validate certificates, Internet protocol addresses, or very small aperture terminal (VSAT) connections and locations during home station training. Many units also face challenges using the JCR effectively, if system role-name validation does not occur or the unit does not establish a medical communications card before execution. This results in many units reverting to a hard copy Department of the Army (DA) Form 3161, *Request for Issue or Turn-in*, 01 December 2017, or handwritten notes for ordering. This system works fine, but it increases customer wait time and does not feed into an automated tracking system for

the BMSO or pass-back ordering with higher MEDLOG entities. Medical personnel at all levels should validate Class VIII ordering PACE plans before execution through a validation exercise. The validation exercise should produce a medical communications card to facilitate all alternate forms of ordering and communication.

When establishing a PACE plan, consider the unique Class VIII challenges. While JCR is a quick and effective way to order push packages by push package number, it becomes more difficult to conduct line item ordering, since BMSOs are not authorized within the system, and a considerable transition of information must occur to turn JCR messages into order documents. Units should strive to use the MC4 DCAM system, which allows connectivity with the BMSO and negates the need for the BMSO to create DCAM orders for customers. This system helps decrease both ordering and requisition timelines and helps the BMSO maintain accountability of items ordered through a digital document register.

Units should use the MC4 DCAM system to order Class VIII. It helps the BMSO maintain digital accountability of items ordered and due in through a digital document register.

DISTRIBUTE THE CLASS VIII TO CUSTOMERS AND TRACK THE DELIVERY STATUS

The BMSO is often not synchronized with the SPO MEDLOG officer and does not have visibility of the scheduled logistics packages (LOGPACs) or the logistics resupply point operations that contain Class VIII. The lack of visibility regarding Class VIII distribution operations on routine logistics convoys puts distribution of Class VIII almost entirely on ambulance backhaul or customer pickup. While ambulance backhaul is convenient, it is not always consistent, thereby creating increased customer wait times and variability. Class VIII resupply operations must be integrated with the SPO section and already established LOGPAC distribution operations. The BMSO should maintain situational awareness of both planned logistics operations and operational considerations to ensure Class VIII distribution plans conform to the BCT's sustainment operations. Equally, a friction point to customers is the infrequent basis for which BMSOs provide Class VIII order status. MC4 connectivity, and failure to establish digital system access, coupled with no regular status updates from higher, result in BMSOs not providing an order status or due out register to their customers. Providing periodic due out registers to customers allows battalion aid stations to identify problems that the BMSO may have overlooked, such as items not ordered during pass-back, items not received, or problems with canceled items. The BMSOs need to pull the Class VIII catalog, request statuses, and provide customers with feedback on the status of orders and cancellations on a frequent basis.

BRIGADE MEDICAL SUPPLY OFFICE OPERATIONS DURING BRIGADE SUPPORT MEDICAL COMPANY RELOCATIONS

While ambulance backhaul is convenient for Class VIII delivery, it does not always occur on a consistent basis, creating increased customer wait times.

Relocating or displacing the brigade support medical company (BSMC) during decisive action operations is often a deliberate plan. However, the relocation of the BMSO is generally an afterthought. Without deliberate planning, relocating the BMSO with forward logistics element (FLE) operations may create breaks in ordering connectivity and uncertainty in distribution. BCTs often choose to jump the BSMC forward of the brigade support area (BSA) when BCT fight

outpaces the medical company's ability to provide ground evacuation support from the BSA. In these situations, it is imperative the SPO section weigh the benefit and risk of displacing the BMSO or leaving the BMSO in the BSA. If moving with the BSMC, the BMSO must consider the heavy reliance on ambulance backhaul for distribution and alternate means of communicating with both higher MEDLOG support and customers, since VSAT support will likely be unavailable. If the BSMC is remaining with the BSA during FLE Role 2 movements, pushing prebuilt packages with the medical company should help mitigate emergency resupply issues through ambulance backhaul and resupply to the BSMC during mass casualty operations. Within the BSA, consider locating at least part of the BMSO with the supply support area. Proximity to the supply support area facilitates the distribution of routine Class VIII orders to supported units via field trains command post personnel and connectivity through the VSAT.

CONCLUSION

Medical supply activities at the BCT level are geared toward satisfying immediate health service support and force health protection requirements and rely heavily on the effective application of agility, velocity, and situational understanding.[1] It is vital that the BMSO integrates with SPO to support timely distribution and a general understanding of current and future requirements to facilitate forecasting. The BCT surgeon, SPO MEDLOG officer, and BMSO must deliberately build an ASL based on unit medical equipment sets, frequently ordered critical items, and items with longer wait times. Units should conduct yearly ASL reviews to validate on-hand quantities and ensure the ASL continues to meet unit needs, based on the mission. Deliberate validation and rehearsal of the PACE plan will allow units to be more prepared to execute effective Class VIII operations. When faced with rapid relocation, units need to weigh the pros and cons of relocating the BMSO with the BSMC in an FLE and how that relocation may disrupt operations, if not deliberately executed. Successful BCT Class VIII operations are dependent upon integration with the health service support plan and sustainment operations, with supervision by the BCT surgeon, SPO section, and SPO MEDLOG officer.

Endnote

1. Army Techniques Publication (ATP) 4-02.1, *Army Medical Logistics*, 29 October 2015.

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CHAPTER 32

Brigade Combat Team and Division Sustainment Support Battalion Integration through Rehearsals

CPT John Briley

INTRODUCTION

Integrating the brigade combat team (BCT) with the combat sustainment support battalion (CSSB) (soon to be replaced by the division sustainment support battalion) is vital to setting conditions for success in large scale combat operations (LSCO). Unfortunately, field observations at the National Training Center (NTC) highlight desynchronization between the BCT and CSSB. This results in shortfalls from high backhaul rates of expendable commodities and inconsistent commodity forecasting from the BCT's logistics planners. One way to integrate the BCT with its supporting CSSB is through the BCT's sustainment rehearsal. Rehearsals present a vital opportunity to integrate units before any operation. According to Field Manual 6-0, *Commander and Staff Organization and Operations*, 05 May 2014, "…rehearsals allow leaders and their Soldiers to practice key aspects of the concept of operations."

DIVISION SUSTAINMENT SUPPORT BATTALION'S MISSION COMMAND STRUCTURE AND HOW IT RELATES TO THE BRIGADE COMBAT TEAM

CSSBs typically belong to a sustainment brigade whose principle mission "…supports Army forces at the tactical and operational levels, providing support to BCTs, multifunctional and functional support brigades, deployable, self-contained division and corps headquarters, and other units operating in its assigned support area."[1] The sustainment brigade has varied missions, but its central mission is to support BCTs directly. This support commonly comes in the form of a CSSB, which can have various support relationships based on operational requirements.[2] The CSSB usually has a support relationship with supported units, such as a BCT, and a command relationship with the sustainment brigade.[3] At the NTC, CSSBs focus on their command relationship with the sustainment brigade and allow their integration with the BCT to suffer. Part of this problem rests on the fact that doctrinally, CSSBs have to be prepared to support multiple BCTs at one time in a division area of operations. Therefore, CSSBs are prone to relying solely on mission orders from their higher headquarters to execute missions. However, despite the challenges CSSBs face supporting multiple BCTs simultaneously, they must integrate with each BCT to provide the best support possible.

SUSTAINMENT REHEARSALS IN THE BRIGADE COMBAT TEAM

Rehearsals are vital to setting conditions for success in any Army operation. Guaranteeing success for sustainment operations in a BCT is illusory. However, executing an effective sustainment rehearsal pays dividends towards posturing Army units to sustain combat operations. Fortunately for BCTs, Field Manual 3-96, *Brigade Combat Team*, 19 January 2021, describes how to perform a productive sustainment rehearsal by listing everything from the agent responsible for the sustainment rehearsals existence to key attendees to the pertinent crux of the event altogether. While Field Manual 3-96 articulates the requirement for a sustainment rehearsal, there is no mention of requiring individuals from echelon above brigade (EAB) support organizations to participate in this important event. This disjointed reality reveals itself at the NTC when EAB representatives generally have no briefing requirements in the BCT's sustainment rehearsal. The BCT seems unsure of how to incorporate them, and the EAB unit seems uncertain on how to

integrate with the BCT. As the BCT relies on EAB support to sustain its operations, it is paramount that central individuals from these units participate in the BCT's sustainment rehearsal to integrate organizations and better envisage how to best support the BCT.

"A WAY" TO INTEGRATE COMBAT SUSTAINMENT SUPPORT BATTALIONS INTO THE BRIGADE COMBAT TEAM'S SUSTAINMENT REHEARSAL

At the NTC, CSSBs vary in who they send to observe the BCT sustainment rehearsal, and they rarely participate in the event. CSSBs need to consider integrating a team of individuals with the BCT that represent the entire CSSB staff during the mission planning process. The following list specifies which individuals the CSSB should integrate with the BCT as early as possible:

- The S-1, to understand personnel requirements;
- The S-2, to understand the enemy situation for the BCT and better understand the operation as a whole;
- The S-3, to integrate with the BCT operations shop and understand the scheme of maneuver;
- The S-4, to synchronize mobility requirements and reconstitution;
- The S-6, to ensure mission command systems are integrated between the two units;
- Support operations (SPO) personnel, to ensure they can support the BCT's synchronization matrix; and
- The CSSB command team, to instill full faith and confidence in the BCT that their EAB sustainment requirements rest in capable hands.

These relationships should culminate in an integrated BCT sustainment rehearsal where CSSB personnel have briefing requirements, and the audience includes the CSSB command team. Continually repeating this process by phase would bridge gaps in the sustainment plan, build rapport between units, and ultimately improve the chance of seamless sustainment to the BCT in combat operations.

COMBAT SUSTAINMENT SUPPORT BATTALION AND BRIGADE COMBAT TEAM SUSTAINMENT REHEARSAL INTEGRATION IN A DIVISION FIGHT

At the NTC, integrating the CSSB with the BCT during their sustainment rehearsal is easier than rehearsing the support of multiple BCTs, considering the constructed adjacent BCTs do not require CSSBs to integrate whatsoever. However, CSSBs need to internally rehearse this requirement in the event they are supporting multiple BCTs in a division battlespace. Being actively involved in multiple BCT sustainment rehearsals presents a challenge to the CSSB, considering the constraints within their battalion staff and their ability to synchronize with multiple BCTs simultaneously while planning and executing operations in the division support area (DSA). It is paramount for the CSSB to be actively involved in the division combined arms rehearsal, including the division sustainment rehearsal. Having a clear understanding of what BCT within the division is decisive, shaping, and supporting the operation helps the CSSB determine what battalion staff members will participate in what BCT's sustainment rehearsal. "A way" to position the CSSB staff amidst multiple BCT simultaneous sustainment rehearsals is to send CSSB SPO personnel to the division's decisive BCT, the CSSB executive officer to the division's supporting BCT, and the CSSB S-3 to the division's shaping BCT. Following the CSSB staff's participation in these sustainment rehearsals, it is important that the CSSB SPO personnel, executive officer, and S-3

convene to share notes and create running estimates to construct a division support plan that enables successful execution. Participating in BCT sustainment rehearsals puts a strain on the CSSB's ability to receive orders from the sustainment brigade while planning and executing operations in the DSA. However, synchronizing both organizations in everything from sustainment operations to scheme of maneuver, and building rapport with supported BCTs, is vital to sustaining LSCO.

SUMMARY

Successfully sustaining a BCT in LSCO is challenging even for the best CSSBs. Failing to synchronize with a BCT results in a high amount of commodity backhaul on support missions, poor link-up procedures, and a breakdown in the rapport between the CSSB and BCT. In LSCO, there is no flexibility for inefficiencies when the CSSB has to support multiple BCTs simultaneously. "A way" to improve a CSSB's efficiency and enable success in sustaining LSCO is active participation at the BCT's sustainment rehearsal.

Endnotes

1. Army Techniques Publication (ATP) 4-93, *Sustainment Brigade*, 11 April 2016.

2. ATP 4-93.1, *Combat Sustainment Support Battalion*, 19 June 2017.

3. Ibid.

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CHAPTER 33

The Division Logistics Support Element

MAJ William Wilcox

Rotational training at the National Training Center (NTC) attempts to replicate aspects of a decisive action fight at the brigade and below level, providing experiences under the umbrella of large scale combat operations (LSCO). This replicative effort extends to all warfighting functions to provide the brigade combat team (BCT) and its subordinate units the ability to see their strengths and weaknesses. For the sustainment warfighting function, one aspect that is replicated is the employment of a division logistics support element (DLSE) to synchronize Army Materiel Command (AMC) support to the BCT. While the DLSE is not a training audience during rotational training, employing it replicates some of the processes and interactions that a BCT would need to conduct to receive the AMC support necessary to maintain combat power. From 2019 to 2021, 16 BCTs executed rotational training at the NTC, and several trends emerged in relation to the internal processes and practices necessary to effectively communicate support requirements to a DLSE or higher headquarters. Engagement by key sustainment leaders alleviates friction points at the BCT level. Leaders should implement processes, validate requirements, effectively communicate requests, and nest these all within the brigade priority of support throughout the operation.

During LSCO, Army field support battalions should deploy the DLSE to coordinate enterprise support with the forward stationed Army field support brigade and the supported division. Doctrinally, the DLSE should be under the operational control of the supported division. The DLSE should collocate with the support area command post or sustainment brigade to receive the support prioritization and employment that best supports the division. During rotational training the DLSE does not plug into the division-level headquarters at the NTC, but the BCT-level observations from rotational training are nonetheless valid.

This chapter's observations and recommendations are derived from rotational training during 2019 to 2021 and the relationship between the BCT and DLSE. The NTC construct features a single BCT directly communicating requests to a DLSE. This is an unrealistic level of support for a single BCT. The Army's ongoing modernization efforts, combined with challenged maintenance personnel and equipment operators, create a demand for capabilities that logistics assistance representatives (LARs) and field service representatives (FSRs) provide. Indeed, that the majority of support that the DLSE provides to the BCT is at the 10-20 level illustrates these problems.

While the realistic level of support that a DLSE would provide to a BCT during LSCO would likely be less than what exists at combat training centers (CTCs), not planning for support is planning for failure. BCTs should ensure that they have a working system to validate requests at the battalion level, communicate them within the brigade, and nest external requests for support with the BCT priority of support by phase. The first area of concern is the ability of subordinate battalions to accurately identify and attribute faults to the proximate system. This is particularly true for U.S. Army Communications-Electronics Command (CECOM) equipment and systems. Between power generation, hardware, and software, units often do not validate troubleshooting, which results in misattributed faults. This misattribution of system faults is then communicated in the request process to the DLSE. When equipped with poor information, the DLSE is unable to identify the correct personnel to assist.

In addition to extending non-mission capable (NMC) times, LAR and FSR personnel lose valuable time troubleshooting the equipment of adjacent units. During LSCO, the speed of operations and the impact of lost days cannot be overemphasized. Each day wasted in the troubleshooting or subsequent requisition process affects the BCT's cumulative readiness. To remedy this issue, the battalion maintenance technician and S-6 should review and validate all requests for support before they are submitted externally to the battalion. While this may add to the priorities and tasks already expected of these staff officers, failing to do so will stymie combat power at the battalion level.

Once requests have been properly validated at the battalion level, the BCT must have a known and enforced plan at the brigade level to receive requests for support, be staffed, and communicate to the division G-4. Units that do not recognize the need for this system degrade their ability to get combat power into the fight. Within their tactical standard operating procedures and Annex F, brigades should clearly establish who receives requests for support by system. A primary, alternate, contingency, and emergency (PACE) plan must be identified and, if possible, be similar to the existing sustainment PACE. Brigades should use the brigade support battalion (BSB) support operations (SPO) sections as the repository of DLSE requests. Units that split this responsibility between the brigade S-6 and BSB SPO section often experience confusion. Requests for DLSE support should also be a topic during brigade maintenance meetings. This gives the larger audience an understanding of where their specific requests lie in priority.

After the BSB SPO section has received the requests, the staff must apply the unit's current priority to those requests before sending them outside the brigade. The BSB SPO section should be aware of both current prioritization and upcoming changes in priority to ensure that all externally submitted requests are properly prioritized. Additionally, as each LAR and FSR has a specific focus, there is little need to apply the priority of maintenance by system. Once the SPO section has applied the priority of support to the requests, the requests should be submitted to the DLSE. While this may seem intuitive, rotational training units continue to overlook this aspect. Also, if the prioritization of both new and existing unfulfilled requests are not reviewed daily, then DLSE resources risk not being applied to the brigade's priorities, but rather the order in which requests were communicated.

Finally, once those LARs or FSRs have arrived at the point of friction, unit maintenance leaders must ensure their guidance and technical requests are captured and actioned. An emerging trend, especially with CECOM systems, has LARs directly interfacing with junior equipment operators to provide guidance and technical recommendation. Unfortunately, the repair part information or corrective actions that the LAR provides are lost at the Soldier level. Subsequently, unit maintenance leaders are unable to follow through on these critical actions, and the specific item remains NMC. Unit maintenance leaders should ensure they engage any visiting LARs or FSRs and formally record the technical guidance or tasks provided.

Through focused validation of troubleshooting, an internal request process, and application of the brigade's priority of support, BCTs can enable themselves as they attempt to maintain combat power during LSCO. However, to maximize the effect of the above three practices, the BCT must integrate them into both garrison operations and field training exercises. Operationalizing the request process in garrison builds organizational muscle memory so that the process is well known and easily executable in a field or deployed environment. While the availability and responsiveness of LAR and FSR support in unit motor pools is greater than what would exist during LSCO, BCTs put themselves at risk by not employing a similar system. Battalion and brigade-level field training exercises must practice these control measures and request procedures. BCTs should engage their local Army field support battalion, division G-4s, and sustainment brigades early to coordinate this level of support.

Implementing the recommendations and considerations discussed in this chapter falls on commanders and sustainment leaders at echelon. Units who choose to ignore these observations do so at their own peril. While some may disdain the roles of LARs and FSRs in maintaining combat power, or even the presence of a DLSE at the CTCs, the Army's ongoing modernization line of effort, combined with a lagging maintenance proficiency, leaves few palatable options. Until the Army addresses this challenge or senior leaders assume risk, leaders must implement processes to more orderly request and prioritize support.

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CHAPTER 34

Support Area Mission Command — The Problems that Support Area Command Posts Solve and the Problems they Present for Division Commanders

LTC James Hubbard

INTRODUCTION

Over the past several years, COL (Retired) Michael Pappal, former director of the Center for Army Lessons Learned (CALL), observed that it has become increasingly challenging for divisions and corps to provide command and control of the rear support area and/or consolidation area. This trend can be seen at warfighter exercises, and has ultimately resulted in the commander of U.S. Army Forces Command directing the establishment of support area command posts (SACP) to fill the gap.[1] Unfortunately, very little doctrine exists on the subject.

Field Manual 3-0, *Operations*, 06 October 2017, defines the support area as, "…the portion of the commander's area of operations that is designated to facilitate the positioning, employment, and protection of base sustainment assets required to sustain, enable, and control operations." It defines the consolidation area as, "…the portion of the commander's area of operations that is designated to facilitate the security and stability tasks necessary for freedom of action in the close area and to support the continuous consolidation of gains."[2]

The preponderance of SACP doctrine is also found within Field Manual 3-0, which states in its entirety:

"Depending on the situation, including the threat, size of the support area, and number of units within the support and consolidation areas, division and corps commanders may form a SACP to assist in controlling operations. The SACP enables division and corps commanders to exercise mission command over disparate functionally focused elements operating within the support and consolidation areas that may exceed the effective span of control of the maneuver enhancement brigade (MEB) or to the division or corps main command posts (CPs).

The SACP is not a separate section in the unit's table of organization and equipment. Commanders form a SACP from the equipment and personnel from the main and tactical command posts. The SACP normally collocates with the MEB, which provides the SACP with signal connectivity, sustainment, security, and workspace. Functions of the SACP include:

- Planning and directing sustainment
- Terrain management
- Movement control
- Area security

When augmented by the MEB staff, the SACP may also:

- Plan and control combined arms operations with units under division or corps control
- Manage airspace
- Employ fires

Normally, an assistant division commander for a division or a deputy corps commander for a corps leads the SACP. The specific functions and responsibilities assigned to the SACP will be assigned or designated by corps or division commanders to their deputy or assistant commanders through an order.

A properly resourced SACP assists corps and division commanders in shaping the support and consolidation areas that complement the corps' or division's scheme of maneuver. This allows the main command post to focus on close and deep operations."

The purpose of this chapter is to provide the reasons why division commanders should establish a SACP. Furthermore, this chapter discusses the difficulties of establishing SACPs, and provides observations and lessons learned from a sustainment focus captured during the 20-10 division-level National Training Center (NTC) rotation during Fiscal Year (FY) 2020.

WHY A SUPPORT AREA COMMAND POST?

The overarching purpose of a SACP is to provide mission command of the support area or consolidation area. In a counterinsurgency fight, divisions consolidate their command posts and transfer authority of the support area to an MEB. Over time, doctrine and modified tables of organization and equipment (MTOEs) were adjusted.[3] However, the shift in focus to large scale combat operations (LSCO) and subsequent training at warfighters and combat training centers has renewed the need for a divisional command post in the support area.

On its own, a MEB is not suited to command and control a divisional support area. It does not have the command authority over divisional units residing within the support area, nor does it have the capability to provide clearance of airspace and clearance of fires for units operating within the support area. Augmenting the MEB with these and other capabilities could close these gaps. However, other division staff-level planning effort gaps would remain, and could only be solved by establishing a SACP to take the lead on planning in the rear.

A SACP is best suited to successfully plan, synchronize, and deconflict certain situations that arise in the support area. For example, if the division headquarters forward retasks a tenant unit within the support area, they most likely will not understand the impact to the rear area of that retasking. If the division shifts the rear boundary of a brigade combat team (BCT) adjacent to the support area, what are the second and third order effects? These situations could rapidly overwhelm the MEB in charge of the support area. Establishing a SACP to maintain command and control of the support area, own divisional planning responsibilities, and task the MEB to execute area defense and protection related tasks will alleviate these issues.

ESTABLISHING A SUPPORT AREA COMMAND POST — NOT WITHOUT DIFFICULTIES

Establishing a SACP mitigates many issues, but it is not an easily accomplished task. Counterinsurgency operations caused divisions to consolidate command posts, and MTOEs must be adjusted accordingly. Divisions are not manned or equipped to establish SACPs without pulling personnel and equipment from other places. This creates a situation where commanders have to pull from their main and tactical command posts to internally resource a SACP. Additionally, very little doctrine exists on the SACP. Therefore, commands must be very deliberate in defining the roles and responsibilities to ensure the SACP is accomplishing the correct tasks and the main command post is not adversely impacted.

NATIONAL TRAINING CENTER DIVISIONAL ROTATION SUPPORT AREA COMMAND POST OBSERVATIONS

Sustainment Battle Rhythm

A SACP's ability to accomplish its sustainment planning and coordination responsibilities is a result of its ties and ability to parallel plan with the division main command post. A good sustainment battle rhythm is a valuable high speed avenue of approach. Observer, coach/trainers witnessed a very successful SACP sustainment battle rhythm during the NTC divisional rotation. It began with a logistics synchronization (LOGSYNC) meeting, hosted by the sustainment brigade and attended by the G-4. The division LOGSYNC meeting locked-in requirements for the next 24- to 48-hours, confirmed requirements for the next 48- to 96-hours, and forecasted requirements for the next 120+ hours. The G-4 validated priorities of support, and the sustainment brigade provided the feasibility assessment of what their assigned units (combat sustainment support battalions, division sustainment support battalions, and functional battalions, companies, teams and detachments) could provide. The most noteworthy outputs of the LOGSYNC were the upcoming movement requirements (both ground and air) across the division's area of operations.

With future movement requirements now known, the G-4 division transportation officer (DTO) hosted a movement working group with the sustainment brigade and a G-3 representative. Here, movements were prioritized or deconflicted as necessary, based on the G-3's division scheme of maneuver. Once movement requirements were identified during the LOGSYNC meeting and the scheme of maneuver was overlaid at the movement working group, the SACP moved their focus to the protection of these movements.

At the sustainment protection working group, the G-2 and G-3 protection representatives considered what threats the enemy may orient on those movements and what protection capabilities were resident to mitigate those threats. Protection priorities were considered and, in the event of protection shortfalls, they considered movement timelines, routes, and modes, and even developed risk acceptance recommendations for the deputy commanding general for support (DCG-S).

This successful SACP sustainment battle rhythm example culminated with a sustainment confirmation brief to the G-4, the sustainment brigade commander, and the DCG-S. The following were topics briefed at the sustainment confirmation brief:

- Sustainment missions in current operations,
- Validated requirements and forecasts in future operations,
- Sustainment future operations shortfalls that may affect the division's scheme of maneuver and mitigation recommendations, and
- Sustainment mission risk assessment and recommendations for risk acceptance by the DCG-S.

The sustainment confirmation brief culminated with guidance by the DCG-S and decisions on what sustainment tasks to include in upcoming division orders. Another best practice observed at the NTC was approving the sustainment brigade's division LOGSYNC matrix for inclusion in division orders.

Division G-4 versus Sustainment Brigade — Who is Responsible for What?

This divisional rotation at the NTC integrated the sustainment brigade's planning bandwidth into the SACP's effort. Similar to when a BCT S-4 is responsible for her brigade's sustainment planning, but the brigade support battalion support operations (SPO) officer has the preponderance

of sustainment planning manpower within his staff, so is the case for a division G-4 and sustainment brigade SPO officer. At the NTC, the SACP had the sustainment brigade SPO planners, commodity managers, and current operations battle captains reside within the SACP to aid current operations battle tracking and future operations planning. This allowed the G-4 to focus efforts on future operations planning, priority setting, and integrating with the corps and theater to adequately resource the division.

NATIONAL TRAINING CENTER RECOMMENDATIONS

Which Came First, the Sustainment Protection Working Group or the Protection Working Group?

The SACP's sustainment protection working group has a sustainment mission and movement focus while the division main command post's protection working group is looking at the entire division's protection effort. But which meeting should feed the other? It is recommended that the SACP schedule its sustainment protection working group first, and allow enough time for the staff to travel to the division main command post's protection working group with the outputs (or sustainment protection requirements) of the SACP's working group. When the SACP holds their working group after the main command post, future requirements may be unclear and fall below other items in priority.

Support Area Command Post Parallel Planning With the Division Main Command Post

Between the division G-4 and the sustainment brigade, the SACP has most of the division's sustainment planners. Again, no doctrine exists on this personnel laydown, so commanders need to make decisions on where to place their planners. NTC observations show the division main command post often has only a G-4 representative and a few logistics planners to tap into for sustainment expertise during planning. This limited sustainment staff has the potential to shortchange the division's planning effort and introduce a plan that is logistically infeasible to execute. While difficult to do across the distributed nature of the division main command post and SACP, the SACP (both G-4 and sustainment brigade planners) should tie into the G-5/35 and parallel plan the sustainment effort.

CONCLUSION

Despite the lack of robust SACP doctrine, and MTOEs that do not reflect enough manpower or equipment to facilitate establishing a SACP, its establishment is nonetheless doctrinal and beneficial for division commanders. The division main command post forward does not have the necessary geographic proximity or staff to focus on command and control of the support area. Simultaneously, a MEB is ill-suited to command and control the support area's assigned divisional and echelon above brigade support assets. In warfighter exercises, these difficulties have been resolved by forming a SACP, manned by a cross-section of division and sustainment brigade staffs, to command and control the support area while the MEB focuses on area defense tasks. From a sustainment perspective, NTC observations support the idea that if a SACP exercises a quality sustainment battle rhythm, remains tied into division operations forward, and parallel/collaboratively plans with division planners, the division will meet with great success during LSCO.

Endnotes

1. CALL Publication 18-04, *Mission Command in the Division and Corps Support Area*, December 2017.

2. Field Manual 3-0, *Operations*, 06 October 2017.

3. CALL Publication 18-04, Ibid.

GLOSSARY

1SG	first sergeant
A&L	administrative/logistics
ABCT	armored brigade combat team
ABE	assistant brigade engineer
ACC	assistant convoy commander
ACP	access control point
ADP	Army doctrine publication
AESIP	Army Enterprise Systems Integration Program
AHA	ammunition holding area
AHS	Army Health System
ALOC	administration and logistics operating center
AMC	Army Materiel Command
AMR	air mission request
AO	area of operations
AR	Army regulation
ASP	ammunition supply point
ASL	authorized stockage list
ASR	alternate supply route
ATHP	ammunition transfer holding point
ATP	Army techniques publication
AVN	aviation
AXP	ambulance exchange point
BAE	brigade aviation element
BAO	brigade ammunition office
BCT	brigade combat team
BDA	battle damage assessment
BDE	brigade
BEB	brigade engineer battalion
BFT	blue force tracker
BISE	brigade intelligence support element
BLST	brigade logistics support team
BMSO	brigade medical supply office
BN	battalion
BOH	Balance on Hand
BSA	brigade support area
BSB	brigade support battalion
BSMC	brigade support medical company
BSS	brigade surgeon section

C&E	communications and electronics
C@RD	Commander's Actionable Readiness Dashboard
CAB	combined arms battalion
CAISI	Combat Service Support Automated Information Systems Interface
CALL	Center for Army Lessons Learned
CAR	combined arms rehearsal
CASEVAC	casualty evacuation
CASL	common authorized stockage list
CAU	crew access unit
CAV	cavalry
CBRN	chemical, biological, radiological, and nuclear
CBRNE	chemical, biological, radiological, nuclear, and high-yield explosives
CC	convoy commander
CCL	combat configured load
CCP	casualty collection point
CDR	commander
CECOM	U.S. Army Communications-Electronics Command
CET	convoy escort team
CIP	common intelligence picture
CKT	circuit
CLS	combat lifesaver
CLRTF	Light Capability Rough Terrain Forklift
CO	company
COA	course of action
COMP	composite supply company
COMSEC	communications security
COP	common operational picture
COS	concept of support
CP	command post
CPCE	Command Post Computing Environment
CPN	command post nodes
CPOF	Command Post of the Future
CPP	convoy protection platform
CROP	Container Roll-in/Out Platform
CSA	corps support area
CSC	composite supply company
CSM	command sergeant major
CSR	controlled supply rate
CSSB	combat sustainment support battalion

CTC	combat training center
CTCP	combat trains command post
CUOPS	current operations
DA	Department of the Army
DCAM	Defense Medical Logistics Standard Support Customer Assistance Module
DCG-S	deputy commanding general for support
DERV	developed, exercised, refined, and validated
DFAC	dining facility
DIV	division
DLSE	division logistics support element
DMC	distribution management center
DODIC	Department of Defense Identification Code
DODIN	Department of Defense Information Network
DOW	died of wound
DSA	division support area
DSSB	division sustainment support battalion
EA	engagement area
EAB	echelons above brigade
ECP	entry control point
ELM	electronics communications maintenance
ESP	engineer supply point
ESR	equipment status report
EXORD	execute order
FA	field artillery
FAS	forward aid station
FBCB2	Force XXI Battle Command Brigade and Below
FDMA	frequency division multiple access
FHP	force health protection
FLE	forward logistics element
FLOT	forward line of own troops
FM	frequency modulation
FMC	full mission-capable
FMT	field maintenance team
FORSCOM	U.S. Army Forces Command
FPU	field pack-up units
FRAGORD	fragmentary order
FRHN	fixed regional hub node
FSC	forward support company
FSCOORD	fires coordinator

FSO	fire support officer
FSR	field service representative
FTCP	field trains command post
FTP	file transfer protocol
FTX	field training exercise
FUOPS	future operations
FWD	forward
FY	fiscal year
GBS	Global Broadcast System
GCS	Ground Combat System
GCSS	Global Combat Support System
GIG	Global Information Grid
GPH	gallons per hour
HCLOS	high capacity line of sight
HEMTT	Heavy Expanded Mobility Tactical Truck
HF	high frequency
HHC	headquarters and headquarters company
HSS	health service support
HLZ	helicopter landing zone
HQ	headquarters
HQDA	Headquarters, Department of the Army
HRP	human remains pouch
IC	intelligence collection
ICW	in conjunction with
IFAK	individual first aid kit
IN	infantry
IP	Internet protocol
IPB	intelligence preparation of the battlespace
IPF	Integrated Planning Framework
JBC-P	Joint Battle Command-Platform
JCR	Joint Capabilities Release
JP	joint publication
KP	kitchen police
KPI	key performance indicator
KS	key staff
LAR	logistics assistance representative
LBS	left behind staff
LD	line of departure
LHS	Load Handling System

LIS	Logistics Information System
LMTV	Light Medium Tactical Vehicle
LOC	line of communications
LOG	logistics
LOGCOP	logistics common operational picture
LOGPAC	logistics package
LOGSTAT	logistics status
LOGSYNC	logistics synchronization
LOS	line of sight
LP	listening post
LRP	logistics release point
LSA	logistics support area
LSCO	large scale combat operations
LZ	landing zone
MA	mortuary affairs
MACP	mortuary affairs collection point
MAS	main aid station
MASCAL	mass casualty
MATO	maintenance officer
MB1	main body 1
MC4	Medical Communications for Combat Casualty Care
MCL	mission configured load
MCNCO	maintenance control noncommissioned officer
MCP	maintenance collection point
MCS	maintenance control section
MD	doctor of medicine
MDMP	military decision-making process
MEB	maneuver enhancement brigade
MED	medical
MEDCOP	medical common operational picture
MEDEVAC	medical evacuation
MEDLOG	medical logistics
MEDO	medical officer
METT-TC	mission, enemy, terrain, troops available, time, and civilian considerations
MFS	Modular Fuel System
MHE	materials handling equipment
MOS	military occupational specialty
MRE	meal, ready to eat
MSR	main supply route

MTG	meeting
MTOE	modified table of organization and equipment
MTRCS	Multi-Temperature Refrigerated Container System
MTV	Medium Tactical Vehicle
NCO	noncommissioned officer
NCOER	noncommissioned officer evaluation report
NCOIC	noncommissioned officer in charge
NGATS	Next Generation Automatic Test System
NIPRNET	Non-classified Internet Protocol Router Network
NMC	non-mission capable
NSN	national stock number
NTC	National Training Center
OCIE	organizational clothing and individual equipment
OIC	officer in charge
OPFOR	opposition force
OPORD	operation order
OR	operational readiness
OSRVT	One System Remote Video Terminal
PA	physician assistant
PACE	primary, alternate, contingency, and emergency
PERSTAT	personnel status
PHA	personnel holding area
PIR	priority intelligence requirement
PLS	Palletized Load System
PMESII-PT	political, military, economic, social, information, infrastructure, physical environment, and time
PMCS	preventive maintenance checks and services
POI	point of injury
POL	petroleum, oils, and lubricants
PZ	pick-up zone
QP	quartering party
RFID	radio frequency identification
ROT	rotation
RP	release point
RSOI	reception, staging, onward, movement, and integration
RSR	required supply rate
RTO	radio telephone operator
RW	rotary wing
S&R	search and recovery

SAAS-MOD	Standard Army Ammunition System-Modernized
SACP	support area command post
SASMO	Sustainment Automation Support Management Office
SAT	satellite
SB	sustainment brigade
SBCT	sustainment brigade combat team
SIGACT	significant activity
SINCGARS	single-channel ground and airborne radio system
SIPRNET	SECRET Internet Protocol Router Network
SITREP	situation report
SKOT	sets, kits, outfits, and tools
SOG	sergeant of the guard
SOP	standard operating procedure
SPO	support operations
SPT	support
SQDN	squadron
SSA	supply support activity
SSL	shop stock list
STT	satellite transmission terminal
SUST	sustainment
SUSTCOORD	sustainment coordinator
TAC	tactical command post
TACSAT	tactical satellite
TACSOP	tactical standard operating procedure
TAMIS	Total Ammunition Management Information System
TAMIS-R	Total Ammunition Management Information System-Redesigned
TD	training day
TDMA	time-division multiple access
TELS	Tactical Enterprise Logistics Systems
TEU	twenty-foot equivalent unit
TF	task force
TLP	troop leading procedures
TM	technical manual
TOC	tactical operations center
TOCNET	Tactical Operations Center Inter-Communication System
TPO	touchpoint opportunities
TRM	Tank Rack Modules
TRP	target reference point
TTP	tactics, techniques, and procedures

UAS	unmanned aircraft system
UBL	unit basic load
UGR	unitized group ration
UGR-A	unitized group ration-A option
UGR-H&S	unitized group ration, heat and serve
VOIP	voice over internet protocol
VSAT	very small aperture terminal
WARNORD	warning order
WIA	wounded in action
WfF	warfighting function
XO	executive officer

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